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NATIONAL SURVEY OF PERSONAL INCOMES AND SAVINGS

PART IV

PERSONAL SAVING AND CONSUMPTION EXPENDITURE

This is the fourth paper in the series devoted to the results of the National Survey of Personal Incomes and Savings. The first paper contained a brief description of the methods used and a summary of the principal findings; the second paper was concerned with the distribution of personal incomes; and the third dealt with the ownership of liquid and non-liquid assets.[1] In this paper we reach the heart of the problem for the study of which this survey was designed, namely, the measurement and analysis of personal saving.

INTRODUCTION

The rise of the modern industrial system, less than 200 years ago, first gave prominence, as well as an economic justification, to the virtue of personal saving. For the greater part of the nineteenth century English manufacturers led the way both in the development of cheaper and more efficient ways of production and in preaching the gospel of thrift, themselves setting a potent example of its application. Thrift became a national religion whose influence spread to the working-class, at any rate to those of its members who enjoyed a slightly better standard or more security than their fellows. The process received a special impetus during the first world war when, in extremity, a campaign was launched for mass popular saving to meet the forces of inflation. After the war the momentum continued and found new forms, especially with the rapid development of the building societies, but men became less sure of the virtue of the process. The prolonged agony of unemployment and economic depression raised doubts about the wisdom of too much saving and greater emphasis was placed on the need for spending. Keynes's *General Theory* gave theoretical expression to this underlying economic *malaise*.

These doubts and questionings were quickly dispelled again in the second world war when the imminent threat of inflation caused the government to take determined steps to stimulate the flow of personal saving. And in the post-war world the struggle to find sufficient resources to meet all demands has continued. It is agreed on almost all sides that the need for capital investment, both to improve and modernise our productive apparatus and to rebuild our towns and to provide a wide range of social amenities, is immense.

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[1] The first three papers appear in the following issues of the BULLETIN: (1) November–December, 1952; (2) February–March, 1953; (3) June–July, 1953.

At the same time, these claims on our resources are confronted by the pressing urge of the mass of the population for a higher standard of living and, on the other side, by the heavy burden of the rearmament programme. It is no wonder, then, that increasing attention is being given to the problem of personal saving.

As in other departments of life, while things go smoothly little attention is paid to the mechanism. So long as this country's saving was sufficient to cover all the investment projects that people were willing to undertake its regular flow was taken very much for granted. This must be the explanation for the fact that there has been no previous attempt to make an intensive study of the forces determining personal saving. A pioneer investigation of the subject was undertaken by Charles Madge in the early years of the second world war;[1] but its conclusions, which are based on interviews amongst working-class families only, and in just a few areas, are of limited applicability. The most important examples of large scale surveys of saving habits come from the United States. The first such survey was the National Resources Committee's Consumer Purchases Study, carried out in 1935–36. A further survey was undertaken, also under government auspices, in 1942; and since 1945 the annual Surveys of Consumer Finances provide regular data, at least until 1950, of the relation between the saving, income and other attributes of the American population.[2]

The present survey is, therefore, the first in this country, or indeed anywhere outside the United States, to attempt to discover the saving habits of a broad cross-section of the population. There are many difficulties in undertaking a task of this nature: not everyone who is approached for information about their personal finances will co-operate; those who do co-operate may not be willing, or perhaps able, to give the whole truth; and the questions themselves may not be framed in such a way as to elicit the right answers. Apart from all this, we find that there are appreciable groups of the population whose saving behaviour in any one year is erratic. And since these people contribute quite largely to the community's total volume of saving or dissaving their chance inclusion or exclusion from a sample may make a great deal of difference to the estimates that such a sample yields. The sampling problem is an acute one and, for that reason alone, much caution must be used in interpreting the results of this type of survey. However, if we proceed carefully, if we compare our results with those obtained from other sources, as well as with the conclusion of commonsense, we may succeed in drawing out of our data some useful additions to our knowledge and so open the road to even more fruitful studies in the future.

The questions which this survey was designed to answer fall into two broad groups. Firstly, there are the *descriptive*, or enumerative, questions : for example, we may wish to make an estimate of the total volume of personal saving and of how this total is composed; or we may want to know what sorts of people are currently saving or dissaving and how much they contribute to the final result. The second group of questions can be described as *analytical* questions. These are the questions about causes : for example, is there a relationship between saving and income ? How is the relation modified by other influences, such as occupation, age, change in income, and so on ? As we shall see, such question cannot be fully and satisfactorily answered from cross-section data alone; but at least it is worth exploring this territory, for it is here that we confront the most interesting and practically important part of our subject. This paper will be divided into two main sections, corresponding broadly with the above division; but as will become clear, these are not watertight compartments and there will be much overlapping between them. As a preliminary, however, we must spend a few pages on definitions, and in particular on our definition of saving.

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[1] *Wartime Pattern of Saving and Spending*, 1943.

[2] Reference may be made to the following: for 1935–36, *Consumer Expenditure in the United States*, U.S. Government Printing Office, 1939; for 1941–42, *Family Spending and Saving in Wartime*, BULLETIN No. 822, U.S. Bureau of Labour Statistics, 1945; for the 1945–50 Surveys of Consumer Finances, articles published annually in the *Federal Reserve Bulletin*. See also an important new book by Simon Kuznets, *Shares of Upper Income Groups in Income and Savings* (1953), in which these and other data on saving propensities in relation to income are analysed and compared.

General Definitions

The ultimate units whose characteristics and behaviour were studied in this survey are called ' income units '. They consist of married couples and single persons of 18 or over, children of under 18 being included with their parents or guardians. Thus the income, asset holdings or saving of an income unit consist of the total amount received, held or performed by each member of the income unit, added together and expressed as a total for the whole unit.

The number of income units interviewed was nearly 2,600. They were selected by controlled sampling from lists of addresses of private houses (hotels and institutions being excluded) in 69 towns and country areas in different parts of Great Britain. The interviews were made in April and May 1952. The information collected about annual flows, such as income or saving, refers to the amount received or performed by the income unit in the 12 month period preceding the date of interview. Information about most of the other characteristics of the income unit, such as, the occupation of the head (in the case of a married couple this means the husband) or total asset holdings, refers to the situation at the time of interview.

The definition of income, for the purposes of this survey, is fully described in the paper which deals with income distribution.[1] Briefly, *gross income* means total money income of the income unit, before tax but after charging business expenses and repair allowances, *plus* the estimated value of own produce consumed by farmers. It does not include the Schedule A value of owner-occupied property; but it does include certain forms of income that are not subject to tax, *e.g.*, war pensions, and private allowances from relations. *Net income*, or disposable income, is gross income *minus* the estimated amount of income tax, surtax and National Insurance contributions payable by the income unit in respect of the income earned in the year.

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[1] Bulletin, Vol. XV, Nos. 2 and 3, February–March, 1953.

DEFINITION OF SAVING

The standard definition of saving is the difference between income, after tax, and consumption. This concept also underlies the definition of saving used in this survey; but, as will be seen, the concept is not unambiguous, and there is room for dispute about its practical application. The practical problems arise when we come to specify precisely what we mean by (*a*) income and (*b*) consumption. For example, in national income accounting it is common practice to treat the life funds of life assurance companies as belonging to the personal sector; with the consequence that the interest earned by those funds forms part of personal income. Likewise, the accrued interest on National Savings Certificates is included in personal income. Or again, the contributions paid by employers to pension funds on behalf of their employees are treated as forming part of current personal income. None of these three types of income is included in the income measured in this survey and the survey's estimate of total personal saving is affected accordingly. Allowance must be made for these, and for some other less important, parts of personal income when comparing the survey's results with outside figures.

On the side of consumption there are also problems of precise definition. It is customary, for example, to treat the purchase of durable goods, such as motor cars, household appliances, or furniture, as an act of consumption. It is well known that this is logically difficult to defend; but for practical reasons it is necessary to draw a line between consumption and investment at some clearly-marked point, and it is generally thought to be more convenient to include durable consumers' goods on the consumption side of the line. In this way we avoid the problem of assessing the value of the existing stock of consumer durables and its rate of depreciation. The matter is not very serious when national income aggregates are under consideration : but when we come to study the behaviour of individual income units this definition is less satisfactory. For there are many individuals who, after building up a stock of funds over a period of time, suddenly spend a large sum of money on the purchase of a car, or, perhaps, a house full of furniture. If durable goods are considered to be consumed at the time of purchase such people will appear to have heavily overspent their incomes in the period in question ; yet they may equally well be regarded as having simply transferred their savings from one form to another. In this survey we follow the conventional definition of saving which excludes the purchase of durable goods. (The purchase of houses, however, is treated here, as in national income accounting, as an act of investment). But we shall examine, in the second part of this paper, the effect of employing an alternative definition in which the purchase of durable goods is counted as investment.

While the principles on which our definition of saving is based are conformable with those generally used in national income analysis, with the few exceptions noted above, our practical method of ascertaining the volume of personal saving is quite different. The statisticians responsible for estimating national income can rarely, if ever, make a direct measurement of personal saving. Some attempts in this direction have been made in the United

States, where the Securities and Exchange Commission compiles global estimates of changes in personal holdings of certain types of assets. But in general the figure of personal saving is arrived at as a residual, by one of two routes : the first, and most obvious, method is to use direct estimates of personal income, personal tax liability and personal consumption expenditure and to take personal saving as the difference between the first of these and the sum of the other two. A second, more subtle, approach is to estimate total capital formation, and to subtract from that the amount for which finance has been provided by the business and government sectors; the remainder must be assumed to have been financed by personal saving.

There are difficulties, and grave risks of error, in both these residual methods, and neither is suitable for use in a survey. In the estimation of the personal saving of individual income units the second residual method is clearly inapplicable. The first method could be used, in principle, but in practice the errors that would arise in subtracting the individual income unit's estimates of its total consumption expenditure from its net income would probably be even greater than those that occur in the similar treatment of national aggregates. Consequently, in all the American surveys referred to above, as well as in the present one, the estimation of personal saving is made directly, by means of questions designed to discover what changes have occurred in the assets and liabilities of each family unit. For this purpose it is necessary to ask a long and exhaustive series of questions covering every possible change in the family balance-sheet, or every possible type of capital transaction. For each type of transaction the person interviewed is asked whether he has bought or sold, lent or borrowed, or invested or disinvested anything during the previous 12 months; and, if so, how much money has changed hands.

Amongst the wide variety of possible capital transactions we can distinguish two fairly homogeneous classes and a remainder. The first class, called *contractual saving*, contains regular capital payments that are made under a contract or agreement. They are of three types : (1) premiums paid for life assurance, including endowment assurance, (2) contributions towards a superannuation fund or scheme, and (3) the repayment by instalments, usually through a building society, of the principal sum borrowed on a mortgage. Each of these is clearly, to some degree, an addition to saving. The repayment of mortgage principal is entirely so : life assurance premiums and superannuation contributions are mainly saving, although they comprise also a payment for the provision of insurance. To make a precise calculation of the addition to the income unit's saving from the maintenance of an insurance policy it would be necessary to subtract from the gross premiums paid the costs of providing the insurance, *i.e.*, management expenses and shareholders' profits, and to add in the policy-holder's share of the accrued income on the fund already accumulated in the hands of the insurance company. For the population as a whole it so happens that these two adjustments very nearly compensate one another; but there is no reason why they should cancel out for each individual. The ideal measurement of individual saving through life assurance would be the increase in the surrender value of the policy between the beginning and end of the year. Such a calculation would be very difficult to make and the survey definition of saving for the individual income unit therefore takes the gross amount of life assurance premiums paid as a measure of saving through this channel. Similar arguments apply to superannuation contributions, the gross amount of which is also included in saving. The total of the three types of contractual payment forms a sub-total or component of total saving and this sub-total is necessarily positive.

The second reasonably homogeneous class of transactions comprises the *changes in liquid assets*. Eight types of liquid assets are identified in this survey and a change in any one of them represents an addition to or subtraction from saving. By summation we arrive at the net change in total liquid assets; and this is treated as the second major component of total saving. It may be either positive or negative.

All other transactions of a capital nature constitute the remainder, called *miscellaneous saving;* it consists of a wide variety of items, some of which are additions to saving and others subtractions from saving. The additions to saving are: (1) the purchase price of land or buildings bought during the year, excluding legal and other costs of transfer, (2) expenditure on physical additions to property owned by the income unit, not counting repairs, replacements and decorations, (3) investments in own business, profession or farm including the ploughing back of profits, (4) money paid for the purchase of stocks or shares, (5) money paid for the purchase of an annuity, (6) capital gifts or loans made to others, (7) reductions in debts outstanding, *e.g.*, by reduction of overdraft, repayment of hire-purchase debts on goods bought previous to the year in question, reduction of debts to retailers, reduced tax liability in respect of surtax compared with the position one year previously, and repayment of loans received from others. The subtractions from saving are: (8) receipts from the sale of property, after repaying any mortgages or loans attached to the property and paying transfer expenses, (9) withdrawals of capital from a business, profession or farm, including any excess of current withdrawals of income over profits earned, (10) money received from the sale of stocks or shares, (11) repayments of money owing to the income unit by others, (12) increases in debts outstanding, *e.g.*, increase in overdraft, hire-purchase debts incurred during the year, increase in debts to retailers, increased tax liability in respect of surtax, and loans raised during the year.

The list of subtractions from saving also includes two items which might not, at first sight, seem to be relevant. It is necessary to put on this side of the account all money receipts from a source other than income; otherwise in those cases where a capital receipt results in an increase in asset holdings there will be an item on the positive side of the account which will appear to indicate saving out of income. To correct for this, whenever an income unit receives a lump sum from a legacy or gift, from a matured or surrendered life assurance policy, or from any other insurance policy, from a pension fund or from post-war credits, or as the proceeds of gambling or of participation in a football pool or sweepstake, the money received is treated as a ' windfall ' and is listed on the negative side of the saving account. For very similar reasons, if the income unit has sold any durable goods during the year the proceeds, which are clearly not part of income, must be regarded as subtractions from saving.[1]

Total saving is the sum of (1) contractual saving, (2) the net change in liquid assets and (3) miscellaneous saving, and since either or both of the two latter can be negative, total saving itself may be negative. Positive saving means that net income exceeds consumption; negative saving means that consumption exceeds net income. It does not follow that when there is positive saving net worth is increased, nor *vice versa*. Net worth, the balance of the current value of assets over the current value of liabilities, can be affected by influences other than saving; in particular, by capital transfers and by capital gains or losses. In the computation of saving for the purpose of this survey the effect of capital transfers, as has been shown above, is specifically discounted. Nor do capital gains or losses have any influence on the survey estimate of saving, since the measurement of changes in balance-sheet values is in terms of transactions, not of comparative net worth at different dates. This conforms with our definition of income, under which capital gains and losses are excluded, except in so far as inventory gains or losses are already incorporated in the profits of the self-employed.

To sum up this discussion it may be useful to express the various definitions of saving in the form of a series of identities. The fundamental identity for each income unit is :

(1) *Saving = Income — Tax liability — Consumption.*

Since this cannot be measured directly with any degree of accuracy, we replace this by its exact equivalent :

(2) *Saving = Direct investment + Lending — Borrowing.*

When allowance is made for the effect of capital transfers this becomes :

(3) *Saving = Direct investment + Lending — Borrowing + Capital gifts —Capital receipts.*

It is in this final form that the definition is applied in practice in this survey.

A. DESCRIPTIVE RESULTS

Estimate of Aggregate Saving

It has been emphasised several times that the estimates of average or aggregate saving that can be derived from this survey are subject to relatively large sampling errors, as well as to the other errors which attend any empirical collection of data. Nevertheless, in view of the importance of the topic it seems worth while to set down in a few round figures what the findings of the survey amount to. In doing so, we must remember that these estimates apply only to that section of the population from which the sample was drawn, namely, people living in private households in Great Britain. They represent about 22 million out of the 24 million income units in Great Britain, the remainder being the inhabitants of institutions, including the armed forces.

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[1] Where major durable goods have been both bought and sold and the value of goods bought exceeds the receipts from goods sold, only this excess is counted as expenditure on durable goods, and there is no entry in the saving account under goods sold. Where the excess is in the other direction there is no net expenditure on durable goods and a net item it entered in the saving account under goods sold.

The survey's estimates of aggregate saving, divided into its major components, are given in the following table :

Aggregate Saving by Private Households in Great Britain, 1951–52
(survey definition of saving)

		£ million
Contractual saving...		+395
of which : Life assurance premiums ...	+240	
Superannuation contributions ...	+ 70	
Mortgage repayments ...	+ 85	
Change in liquid assets ...		—385
Miscellaneous saving ...		+ 80
Total saving ...		+ 90

Before we comment on these figures it is necessary to adjust them to the definition of saving used in national income estimates. The adjustments are all on the positive side, as follows :—

Additions to Survey Estimates to Adjust to National Income Definition of Saving[1]

		£ million
1.	Excess of property income of life assurance companies and friendly societies over expenses, taxes, annuities and profits ...	14
2.	Employers' contributions to pension funds...	104
3.	Interest accruing on Savings Certificates ...	62
4.	Dividends paid to football pool winners ...	30
5.	Legal fees, stamp duties and other costs of transfer of land and buildings, paid by persons ...	30
	Total addition ...	240

The first item arises because the survey definition of saving through life assurance takes no account either of the expenses of providing insurance or of the property income of the accumulated funds. It also allows for the increase in the funds of friendly societies. The second and third items are included because, although they both form part of personal saving in the national income estimates, they are not collected in the course of the survey. The fourth item is a rather curious one. The dividends paid out by the football pools are accumulations of capital out of the stakes contributed by football pool supporters, and in this sense they are the outcome of collective saving by this section of the population. Once the money has been staked the act of saving has been performed : the football match results merely determine how the total fund shall be divided amongst the winners. The problem is : to whom is this act of saving to be attributed ? It cannot be attributed to the winners because that would conflict with our concept that saving derives only from income. In principle, the problem could be solved by imputing a proportion of each person's stake as a contribution to saving; but this would be very laborious and would scarcely justify the collection of the necessary data. It seems better, therefore, not to try to allocate this component of saving but to add in the total sum as an adjustment to the aggregate. Finally, the fifth item arises because the official estimates now include expenses of transfer of real property in total capital formation. It seems a questionable proceeding; but since our task is merely to render our estimates comparable with the official figures the adjustment is necessary.

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[1] Sources : (1) Statistics published by the Life Offices Association, and reports of the Industrial Assurance Commissioner and the Registrar of Friendly Societies ; (2) Estimate provided by the Central Statistical Office ; (3) Statistics published by the National Savings Committee ; (4) Estimate based on figures published in the Report of the Royal Commission on Betting ; (5) A rough guess of the proportion of the total of these costs incurred by persons. The total for 1951, including business and government expenses of this sort, is estimated in the National Income blue book at £54 million.

So far as possible these adjustments are in respect of the year 1951–52, but some are based on data for the calendar year 1951. All relate to the United Kingdom, and in no case has any attempt been made to exclude the part attributable to the institutional population. Strictly, therefore, they do not apply to the population covered by the survey; but they are probably of the right order of size for this purpose.

When the survey's estimate of total personal saving is adjusted to the national income definition of saving the total is increased from £90 million to £330 million.[1] The adjusted account of personal saving is as follows :

Aggregate Saving by Private Households in Great Britain, 1951–52
(national income definition)

		£ million
Contractual saving		+513
of which : Life assurance and friendly societies	+254	
Superannuation contributions by both employers' and employees'	+174	
Mortgage repayment	+ 85	
Change in liquid assets		—323
Miscellaneous saving		+140
Total saving		+330

The most remarkable fact revealed by this table is that contractual saving amounts to over £500 million, or over 4 per cent of gross personal income. It is a strking tribute to the saving propensities of the British public. Added to this there is a sum of £100–150 million of miscellaneous saving, the net result of a great variety of transactions, much of which is due, as we shall see, to the ploughing back of profits into private businesses. Finally, this total of about £650 million on the positive side is offset by withdrawals of over £300 million from liquid sources, particularly from national savings and joint stock bank accounts.

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[1] Both figures are amended from those published in the preliminary estimates in BULLETIN Vol. XIV, Nos. 11 and 12.

How does our estimate of total personal saving compare with the official estimates ? This is a difficult question to answer. The official estimates are given for calendar years, and the latest ones suggest that there was a radical shift in personal saving between 1951 and 1952. Total personal saving, including provisions for depreciation and stock appreciation by private firms, rose from £220 million in 1951 to £502 million in 1952.[1] If we subtract the depreciation provisions this leaves £103 million in the first year and £388 million in the second. It is not legitimate to infer from this that saving for the financial year 1951–52 was £103 million *plus* a quarter of the increment of 1952 over 1951, since consumer spending habits changed quite substantially between the first quarter of 1951 and the first quarter of 1952. While total personal incomes for the year 1952 were about £770 million above 1951 a comparison of the first two quarters suggests that personal incomes in the first quarter of 1952 were as much as £250 million above the level of the first quarter of 1951. Consumer expenditures, on the other hand, rose between these two periods by only £85 million; so that, even after allowing for tax, it seems that personal saving in 1951–52 may have been about £150 million greater than in the calendar year 1951. The official estimates, therefore, seem to suggest that total personal saving in 1951–52 was of the order of £250 million, as against our estimate, on the same definition but for a smaller segment of the population, of £330 million. The absolute difference of £80 million is not remarkable when due account is taken of the possible errors in both estimates.

The Distribution of Personal Saving and of its Components

We now proceed to outline the results of the survey in greater detail and, in particular, to provide data on the distributions of saving and of its components between persons. This is an aspect of the problem with which the survey is better qualified to deal; and indeed it is the only source from which such information can be derived. The order of discussion in this section will be as follows : first, we shall consider the distributions of the various forms of contractual saving and of contractual saving as a whole; then, we shall discuss the changes in liquid assets and the distribution of total liquid asset changes; thirdly, we shall say something about the other components of saving. This leads, finally, to a discussion of the distribution of total saving and an analysis of total saving into its components amongst the different sub-groups of the population.

Life Assurance Premiums

The first type of contractual saving to be discussed is life assurance premiums. The data refer to the gross amount of regular premiums paid during the year by any member of the income unit in respect of private life assurance policies, including endowment policies. Payments for National Insurance were specifically excluded. The distribution of income units according to the size of payments made is given in Table 53.

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[1] See *National Income and Expenditure, 1946–52.*

TABLE 53

Life Assurance Premiums Paid in Year
(percentage distributions of income units)

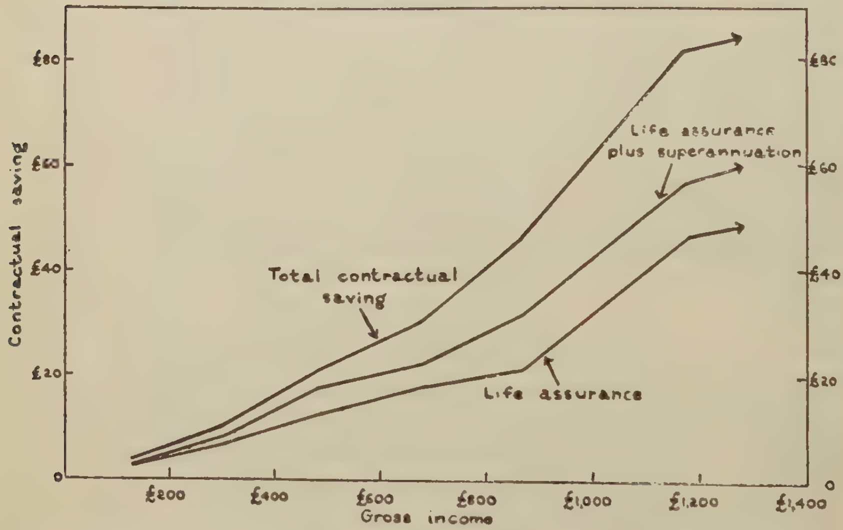
Type of income unit	*Total life assurance premiums paid*								*Those who pay life assurance*	
	Nil	*£1–4*	*£5–9*	*£10–19*	*£20–29*	*£30–49*	*£50–99*	*£100 and over*	*Mean £*	*S.D. £*
All income units	30	17	19	20	7	4	2	1	16	28
Gross income										
Under £100	58	29	8	4	1	—	—	—	4	4
£100—199	51	26	14	7	2	*	*	—	6	7
£200—299	40	24	21	13	1	1	*	—	8	7
£300—399	25	15	25	22	9	3	1	*	12	12
£400—499	15	12	25	32	10	5	1	—	14	10
£500—599	16	8	19	32	13	9	3	*	17	15
£600—699	16	6	16	41	11	7	2	1	18	18
£700—799	14	10	20	29	8	11	8	*	20	20
£800—999	26	6	8	17	14	15	13	1	29	21
£1,000—1,499	24	8	3	15	8	10	19	13	61	80
£1,500—1,999	8	—	3	9	19	22	31	8	52	38
£2,000 and over	16	—	7	—	8	6	26	37	140	132
Occupation of head										
Self-employed	21	7	13	21	6	14	11	7	40	60
Managers, etc.	21	4	6	22	13	14	14	6	44	66
Clerical and sales	34	18	20	16	5	5	2	—	13	14
Skilled manual	23	14	22	27	9	4	1	*	13	11
Unskilled manual	28	17	24	22	6	3	*	—	10	9
Retired, etc.	47	27	13	8	3	1	1	*	8	11
Age of head										
18—24	62	17	15	4	1	1	—	—	7	6
25—34	25	11	19	29	9	5	2	*	15	15
35—44	15	11	20	32	8	8	4	2	21	38
45—54	19	15	20	23	12	5	4	2	20	34
55—64	18	21	28	19	6	4	3	1	15	30
65 and over	50	28	11	7	3	*	1	*	7	11
Sex of head										
Male	25	13	20	24	9	5	3	1	18	31
Female	47	27	14	9	2	1	*	*	7	9

* Less than a half of one per cent.

Of all income units in the sample, 70 per cent were paying some premiums for life assurance. Half of these, however, were paying less than £10 per annum, in most cases, presumably, to door-to-door collectors employed by the ' industrial ' assurance companies and collecting societies. The average payment by those paying life assurance was £16 per annum, and we can estimate that the total of life assurance premiums paid by income units in private households was about £240 million. Figures issued by the companies in respect of ordinary life assurance and deferred annuity policies (apart from pension schemes) show that total premiums paid by persons in the U.K. in 1951 amounted to nearly £140 million, while an additional £133 million was paid in premiums to industrial assurance companies and collecting societies.[1] If allowance is made for the fact that the survey's figures cover only about 90 per cent of the U.K. population, this total of £270 million is consistent with the survey's estimate of £240 million.

Both the proportion of income units paying life assurance and their average payment increase as gross income rises, at least as far as the income level of £800. Thereafter the proportion, and to some extent the average payment, are subject to fluctuations whose origin is not quite clear. It may be that these fluctuations are simply a reflection of sampling errors; but it may equally be true that people in the upper income groups are less consistent in their behaviour than those at lower levels. In particular, one should remember that a very large proportion (between a third and a half) of the income units with incomes of £1,000 and over consists of self-employed business and professional people, whose economic behaviour is generally more varied than the behaviour of employees. In Chart 19 the average payment of life assurance per income unit, covering all income units in each income group irrespective of whether they pay life assurance or not, is plotted against gross income. It appears that there is a fairly constant average relation between gross income and life assurance payments for all income groups below £1,000 a year, and that life assurance payments amount to about 2½ per cent of gross income, or 6d. in the £.

CHART 19. Contractual Saving in Relation to Gross Income



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[1] For ordinary life assurance and annuity business, see a leaflet entitled *British Life Assurance Statistics*, published by the Life Offices' Association, October 1952. For industrial assurance, see *Industrial Assurance, Statistical Summary, 1941–1951*, published by the Industrial Assurance Commissioner, October 1952.

The analysis of the sample into occupational groups reveals that about four out of five of the self-employed and managers pay life assurance, and almost as many of the skilled manual worker group. But the self-employed and managers pay out on the average much larger sums, £40 and £44 respectively, compared with an average of only £13 by the skilled manual workers. Only two-thirds of the clerical and sales group pay life assurance; and this is probably due to the large proportion of females in this group. Income units with female heads much less frequently pay life assurance than those with male heads. This again is related to the fact that only half of the retired and unoccupied pay life assurance, the majority of these being also income units with female heads. Although, in the absence of a closer analysis, the evidence on this point is not conclusive, it would seem that occupation and sex exercise to some degree an independent influence in this matter. It is certainly true that in every age group, except perhaps the lowest, the proportion of females paying life assurance is appreciably less than the proportion of males, and their average payment is usually less than half.

The analysis by age of head shows that young people under 25 are not very conscious of the importance of life assurance. The proportion of females in this group is very large but this is not the explanation : both males and females of less than 25 show the same tendency to be unattracted by life assurance. A more likely explanation is the fact that nine out of ten income units in this age group are single persons : more than half of such people pay no life assurance. The propensity to pay life assurance increases up to middle age, flattens off a bit, and, as one would expect, drops appreciably after the age of 65. This pattern is broadly true, as we shall see, of contractual saving as a whole, but it appears to differ from the pattern for total saving, which reaches a maximum sometime after middle age.

Superannuation Contributions

The second component of contractual saving consists of the superannuation contributions paid by persons out of their wages or salaries and normally deducted by their employers at source. The data again refer to the total amount paid during the year by any member of the income unit, but it is unlikely that there are many cases where the payments are made by anyone other than the head. As in many other aspects of economic behaviour, the population divides into active and inactive members : in this case, the division is between those who pay superannuation and those who do not. The distinction between these two groups is not identical with the distinction between those who ‘ belong ’ to a pension scheme and those who do not. Some people are entitled to a pension without making contributions, notably civil servants and bank officials. Strictly, it could be maintained that civil servants receive larger salaries than they are nominally paid, the balance being equal to the present discounted value of the additional pension rights currently accruing to them. It would obviously be difficult to work this out, and ‘ saving ’ from this source is neglected, both in the official estimates of national income and in this survey.

The data summarised in Table 54 refer, so far as possible, only to contributions paid into schemes arranged by employers. There are also schemes run by trade unions and friendly societies, but these are generally of minor importance. The table shows that 19 per cent of all income units are currently contributing to a pension scheme. Amongst the occupied population, including the self-employed, the proportion is 24 per cent and amongst employees only it is 27 per cent. When allowance is made for those who are entitled to non-contributory pensions, probably amounting to a further 2 per cent of the population, it would seem that nearly 30 per cent of all employees are covered by some sort of pension scheme. This is an astonishingly high figure; and current evidence suggests that the proportion is growing.

TABLE 54

Superannuation Contributions Paid in Year[1]
(percentage distributions of income units)

Type of income unit	*Total superannuation contributions*							*No. in sample*	*Those who pay superannuation*	
	Nil	*£1–9*	*£10–19*	*£20–29*	*£30–49*	*£50–99*	*£100 and over*		*Mean £*	*S.D. £*
All income units	81	8	5	3	2	1	*	2598	17	21
Gross income										
Under £100	100	—	—	—	—	—	—	201	—	—
£100—199	97	2	1	—	—	—	—	407	8	2
£200—299	90	5	4	1	—	*	—	344	11	12
£300—399	82	11	6	1	*	—	—	469	9	7
£400—499	72	12	8	7	1	—	—	385	13	9
£500—599	60	16	11	7	5	1	—	251	16	15
£600—699	70	10	6	6	8	—	—	154	19	12
£700—799	65	7	8	5	15	—	—	95	23	12
£800—999	64	3	8	6	15	4	—	97	30	14
£1,000—1,499	74	1	6	3	2	14	—	101	41	20
£1,500—1,999	63	2	—	3	5	24	3	41	63	27
£2,000 and over	80	—	—	—	1	3	16	53	146	60
Occupation of head										
Self-employed	98	—	—	*	*	2	—	230	50	11
Managers, etc.	42	3	10	12	21	9	3	259	39	34
Clerical and sales	70	6	11	10	3	*	—	330	18	10
Skilled manual	76	14	7	2	1	*	—	807	11	12
Unskilled manual	85	9	5	1	—	—	—	388	8	6
Retired, etc.	100	—	—	—	—	—	—	571	—	—
Age of head										
18—24	86	10	3	1	—	*	—	296	10	11
25—34	74	10	9	3	3	*	*	456	15	13
35—44	73	9	7	5	5	1	*	492	19	16
45—54	78	10	6	4	1	1	*	499	19	26
55—64	78	9	6	3	2	1	1	382	22	30
65 and over	100	—	—	—	—	—	—	473	—	—
Sex of head										
Male	78	10	6	3	2	1	*	1918	18	22
Female	90	4	3	2	1	*	—	680	15	12

* Less than a half of one per cent.

[1] The table refers only to contributions paid into schemes arranged by employers. Contributions to trade union or other schemes were excluded.

The proportion of income units who contribute to pension schemes increases as income rises up to about £400 a year, after which it levels off at about a third. The average annual payment, as one would expect, increases quite regularly with income, at least from the £400 income level onwards. The average proportion of gross income paid for superannuation is 3–4 per cent at all levels except the lowest but, as the distributions within income groups indicate, there are quite wide variations in this proportion, part of which must be due to the inclusion in gross income of income from other sources than employment and from other members of the income unit than the person who is paying superannuation.

Since self-employed persons cannot normally contribute to pension schemes, the 2 per cent of this group shown in the table as contributing probably occur as a result of payments by the wife or by the head himself in a part of the year in which he was an employee. Nearly three out of five managers and technical employees are contributors, and a further 5 per cent belong to non-contributory schemes. The proportion of contributors amongst clerical and sales employees is 30 per cent, of skilled manual workers 24 per cent and of unskilled workers 15 per cent. As is to be expected, managers pay much higher contributions than other employees.

The variation between age groups is not very marked, except that in the youngest groups there are rather few contributors and amongst those of 65 and over none at all. As between males and females the proportion of males who contribute is twice as large as the proportion of females. This is influenced by the fact that females occur as head of income units most often either in the youngest age groups or much later on in life.

Table 55 contains an analysis of the proportion of employees contributing to pension schemes in various industries. The industrial groups, based on the Standard Industrial Classification, are rather wide but the figures may still be of some interest. For some of the groups, or combinations of groups, we

TABLE 55

Employees Contributing to Pension Schemes, by Industries

Industry of head of income unit	*Percentage of each group of employees who contribute to pension schemes*			
	All employees		*Non-manual*	*Manual*
Manufacture—metal and engineering	18		42	13
Manufacture—other	24		36	21
Agriculture, horticulture and fishing	5	31	30	31
Building and contracting	9			
Mining and quarrying	78			
Transport and communications	19	20	27	14
Gas, water and electricity	38			
Distribution	15			
Professional, financial and other services	35	40	54	26
Public administration and defence	49			
All industries	27		40	21

also show separately the proportions of manual and non-manual workers who contribute to pension schemes. The general average for all employees in all industries is 27 per cent; for ' white-collar ' workers 40 per cent, and for manual workers 21 per cent. The highest proportion for any one industry occurs in mining and quarrying and is caused by the recent introduction of a pension scheme by the National Coal Board. The lowest proportions occur in agriculture and building. Although only 49 per cent of those engaged in public administration and defence are contributors to pension schemes a further 15 per cent of this group are entitled to non-contributory pensions, most of them being non-manual workers. The proportion of non-manual workers in this group who are entitled to a pension on retirement is therefore much higher than would appear from the figure for contributors only.

Mortgage Repayment

The information collected on mortgage repayments was not tabulated directly but, since mortgage repayments were included in total contractual saving, the total volume of repayments by each group of the population can be estimated by subtracting their life assurance and superannuation payments from their total contractual saving. From this we can calculate the average amount of mortgage repayment by all income units within each group.

The estimated total mortgage repayment and the average per income unit, calculated separately for the various groups of the population, are shown in Tables 66 and 67. The figures are subject to all the usual possibilities of error and to the further difficulty that a substantial proportion of mortgagors could not make an accurate division of their total instalments into the two parts representing interest and capital repayment respectively. In these cases we had to estimate the amounts belonging to each part by reference to other information about the income unit. Broadly, the procedure was to divide the people concerned into those whose mortgages were likely to be of pre-war origin and those whose mortgages were likely to be of post-war origin. For the former, the principal repayment was assumed to be three-quarters of the total instalment; for the latter, half the instalment.

The total estimated repayment of mortgage is £85 million. This figure is of particular interest because there is no other source from which such an estimate can at present be derived. Building society statistics show the gross amount of mortgage repayment; but this includes a large quantity of premature repayments, which occur, for example, whenever a mortgaged house changes hands. Total repayments of principal to building societies in 1951 were nearly £170 million; and the inference to be drawn from the survey figures is that about half of this amount was due to premature repayments.

Total Contractual Saving

The amounts paid by each income unit in respect of each of the above three components of contractual saving were added together to give a figure for its total contractual saving; and the distribution of income units according to their total contractual saving is shown in Table 56. Total contractual

TABLE 56

Total Contractual Saving[1]
(percentage distributions of income units)

Type of income unit	*Contractual saving*						*All in group*		*Those saving contractually*	
	Nil	*£1–9*	*£10–19*	*£20–49*	*£50–99*	*£100 and over*	*Per cent*	*No. in sample*	*Mean £*	*S.D. £*
All income units	26	30	18	17	7	2	100	2598	24	40
Gross income										
Under £100	57	37	3	2	1	—	100	201	6	10
£100—199	48	40	9	2	1	*	100	407	8	12
£200—299	36	41	16	5	2	—	100	344	11	13
£300—399	21	34	24	19	2	*	100	469	16	14
£400—499	10	29	26	29	5	1	100	385	20	17
£500—599	9	20	23	35	12	1	100	251	27	23
£600—699	9	13	29	34	13	2	100	154	29	27
£700—799	11	18	16	24	27	4	100	95	40	35
£800—999	14	8	12	29	23	14	100	97	53	39
£1,000—1,499	13	3	7	16	34	27	100	101	94	84
£1,500—1,999	5	2	7	32	17	37	100	41	98	81
£2,000 and over	7	7	—	6	25	55	100	53	193	170
Occupation of head										
Self-employed	16	19	15	20	18	12	100	230	56	80
Managers, etc.	7	4	9	30	29	21	100	259	77	82
Clerical and sales	24	28	15	22	10	1	100	330	24	24
Skilled manual	19	30	23	23	5	*	100	807	19	18
Unskilled manual	25	36	26	11	2	—	100	388	13	12
Retired, etc.	46	39	9	5	1	*	100	571	10	16
Age of head										
18—24	56	33	7	4	*	—	100	296	9	10
25—34	19	24	25	23	6	3	100	456	24	27
35—44	11	22	27	24	13	3	100	492	31	45
45—54	12	30	20	25	9	4	100	499	31	53
55—64	15	39	17	19	7	3	100	382	24	41
65 and over	49	38	8	4	1	*	100	473	9	14
Sex of head										
Male	20	27	21	21	8	3	100	1918	28	43
Female	42	39	11	6	2	*	100	680	10	15
Housing tenure										
Owners:										
Without mortgage	35	24	15	13	9	4	100	381	37	70
With mortgage	1	3	11	37	34	14	100	242	62	54
Tenants	15	37	24	20	3	1	100	1299	17	25
Non-heads of households	52	29	10	8	1	*	100	676	12	17

* Less than a half of one per cent.

[1] Total contractual saving is defined as the sum of life assurance premiums, superannuation contributions and the repayment by instalments of the principal borrowed on a mortgage.

saving varies directly with income in a fairly smooth fashion (see Chart 19). Expressed as a proportion of gross income, it increases from about 3 per cent for the income groups below £400 up to a maximum of 7 per cent for those with £1,000–1,499, falling away to about 5 per cent for those with incomes of £1,500 and over. (In computing these percentages the total contractual saving by the members of each income group is expressed as a percentage of the gross income of *all* the members of the group, whether they save in this way or not).

The most common method of saving contractually is, as we have seen previously, through the channel of life assurance: 70 per cent of all income units pay life assurance premiums. When saving through the other two channels is taken into account, the proportion of income units who save contractually through any one or more channels is increased by only 4 per cent; and there is clearly much overlapping in the incidence of the three types of saving. The hard core of non-savers by contractual methods is found amongst the young people under 25 and the old age pensioners. In each group there is a large proportion of females and the average income is low.

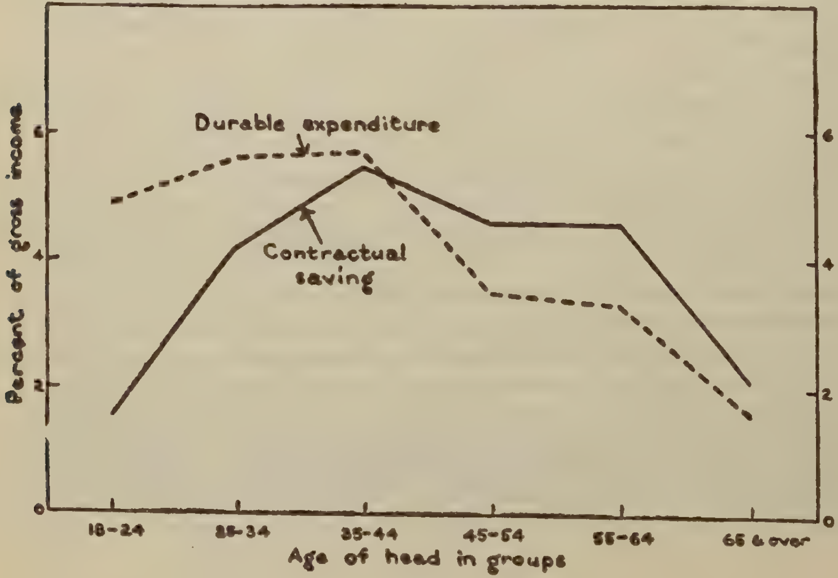
The variation of contractual saving with age is shown in Table 57 and is illustrated in Chart 20. In each age group total contractual saving has been

TABLE 57. *Contractual Saving and Durable Expenditure as a Proportion of Gross Income, by Age Groups*

Age of head of income unit	*Mean gross income*	*Per cent of income units*	*Per cent of total income*	*Each item expressed as per cent of gross income*	
				Contractual saving	*Durable expenditure*[1]
	£	%	%		
18—24	260	12.4	7.6	1.5	4.9
25—34	461	18.3	19.8	4.2	5.6
35—44	511	18.6	22.4	5.5	5.7
45—54	593	18.7	26.3	4.6	3.5
55—64	432	14.5	14.7	4.6	3.3
65 & over	221	17.5	9.2	2.1	1.6
Total	424	100.0	100.0	4.3	4.2

[1] The retail price, less receipts from the sale or trading in of similar goods, of purchases of the following items: cars, motor cycles, television sets, refrigerators, washing machines and other durable goods costing £25 or more.

CHART 20. Contractual Saving and Durable Expenditure by Age Groups



expressed as a percentage of total gross income. It is noticeable how rapidly this percentage increases from the first to the third age group, even in spite of a considerable rise in the level of gross income during this period. Most of this increase arises from a growth in the volume of life assurance payments (see Table 66), which suggests an increasing awareness in these years of the importance of saving for old age and other contingencies. For comparison, the table and chart also show the volume of expenditure on major durable goods (to be defined in a later section of this paper) expressed as a proportion of gross income. The figures indicate that in the younger age groups expenditure on durable goods takes priority over contractual saving, whilst in the older age groups this position is reversed.

In the final section of Table 56 income units are grouped according to their housing tenure. This reveals the very heavy contractual saving of people with mortgages, whether in comparison with owners who are without mortgages or in comparison with people who rent their accommodation. It is true that these three groups differ in other respects also. The mortgagors are on the average younger than either of the other two groups of householders : only 6 per cent of them are 65 and over compared with 38 per cent of the owners without mortgage and 18 per cent of the tenants. On the other hand, mortgagors have an average income about 50 per cent greater than tenants, and only a little less than owners without mortgage. Expressed as a percentage of their gross income, mortgagors' contractual saving amounts to 10 per cent, compared with 3–4 per cent for each of the other two groups of householders.

It is of some interest to study the pattern of contractual saving when expressed as a percentage of net income (*i.e.*, gross income *minus* tax liability). The average for all income units (calculated as the ratio of the means, not as the mean of the ratios) is 4.9 per cent; and the distribution of income units according to this characteristic is shown in Table 58. From this table it can be seen that, while 10 per cent of all income units save by contractual methods a tenth or more of their net income, the proportion who save to this extent amongst the self-employed is 22 per cent, amongst managers 34 per cent and amongst people with mortgages more than 50 per cent.

Changes in Liquid Asset Holdings

The second group of transactions forming part of total saving consists of changes in liquid asset holdings. As was shown in the previous paper in this series, the survey's estimates of the total stocks of liquid assets in the hands of private persons do not agree at all closely with outside estimates of the total stocks of such assets outstanding. The survey estimates were in each case too small. When we compare the survey's estimates of changes in the personal holdings of these assets with outside estimates of such changes we find a rather similar disparity. As Table 59 shows, in each case in which a comparison can be made, except for Defence Bonds, the survey estimate shows a bigger fall in personal holdings than is suggested by the outside figure. It

TABLE 58. *Contractual Saving as a Proportion of Net Income (percentage distributions of income units)*

Type of income unit	*Contractual saving as per cent of net income*					*Total*	*Mean contractual saving as per cent of mean net income*	*No. in sample*
	Nil	*1–4%*	*5–9%*	*10–19%*	*20% and over*			
All income units	26	47	17	8	2	100	4.9	2598
Occupation of head								
Self-employed	16	42	20	13	9	100	7.0	230
Managers and technical ...	7	26	33	28	6	100	9.1	259
Clerical and sales	24	42	22	11	1	100	5.1	330
Skilled manual	19	56	18	6	1	100	3.9	807
Unskilled manual	25	57	15	3	*	100	3.1	388
Retired and unoccupied ...	46	36	11	5	2	100	3.2	571
Age of head								
18—24	56	36	6	1	1	100	1.7	296
25—34	19	51	19	10	1	100	4.6	456
35—44	11	51	26	10	2	100	6.0	492
45—54	12	53	22	10	3	100	5.8	499
55—64	15	52	20	10	3	100	5.5	382
65 and over	49	38	9	3	1	100	2.3	473
Housing tenure								
Owners :								
Without mortgage ...	35	41	15	6	3	100	4.8	381
With mortgage	1	16	30	43	10	100	11.5	242
Tenants	15	60	20	4	1	100	3.9	1299
Non-heads of households ...	52	35	10	3	*	100	2.5	676

* Less than a half of one per cent.

TABLE 59. *Comparison of Estimates of Changes in Liquid Asset Holdings (£ million)*

Type of liquid asset	*Survey estimate of change in holdings of private households*	*Outside estimate of total change in holdings*[1]	*Excess of outside estimate over survey estimate*
Post Office Savings Bank deposits ...	—140	— 47	+ 93
Trustee Savings Bank deposits	— 20	+ 28	+ 48
National Savings Certificates	— 36	— 29[2]	+ 7
Defence Bonds	— 42	— 65	— 23
Total National Savings	—238	—113	+125
Other savings bank deposits	— 19	N.A.	N.A.
Building society shares and deposits ...	— 2	+100	+102
Co-operative society shares and deposits	— 14	— 9	+ 5
Joint stock bank deposits...	—112	N.A.	N.A.
Total liquid assets	—385	N.A.	N.A.

---

[1] The estimates of changes in National Savings are the official figures for the period from end April 1951 to end April 1952. The estimate for the building societies is only approximate since building society figures are compiled at annual intervals and do not all refer to identical periods. The estimate for the co-operative societies is subject to similar qualifications.

[2] Increase in principal remaining invested of £8 mill. *minus* £37 mill. accrued interest paid out on certificates cashed in the year. This conforms with the way in which changes in holdings of National Savings Certificates were measured in the survey.

is interesting to note that the principal differences occur for those assets for which the survey estimates of stocks outstanding were particularly deficient: for example, the survey estimates of the stock of Post Office and Trustee Savings Bank deposits were only about half the official figures; and for each of these assets the survey results show a fall in personal holdings during the year 1951–52 greater than that which is shown by the official figures. Similar features are exhibited by the figures for building society shares and deposits.

What can be the explanation of these differences? In discussing, in the previous paper, the deficiencies of the survey estimates of the stocks of liquid assets it was suggested that they were probably due to evasion of the survey by a small section of the population, mainly dependent on investment income and holding large amounts of these assets. If there be any truth in this hypothesis, the information now adduced on the discrepancies in the estimates of the changes in asset holdings would suggest that these same people were adding to their liquid assets during the year 1951–52, contrary to the trend amongst the rest of the population. But this argument must not be pushed too far. The survey's estimate of any one component of saving, except for the steady contractual element, is likely to be much less reliable than its estimate of total saving; for large switches in liquid and other asset holdings are quite consistent with quite small movements of saving as a whole. It is possible, in other words, that there are internally compensating errors in the survey estimates of the various components of saving. For this reason not too much weight should be placed on the survey's estimates of the size of individual components, with the exception, as mentioned above, of the estimates of contractual saving.

The net change in the total of each liquid asset is the resultant of a very large number of transactions; and at the end of a year there are several million income units whose total liquid assets have, on balance, increased or diminished. In Table 60 we present estimates of the total number of income units who increased or reduced their holdings of each type of liquid asset during the year 1951–52, the average amount saved or dissaved in this way, and the total estimated change. As stated in the note to the table, the figures are intended to include, except in the case of National Savings Certificates, any interest or dividends accrued during the year and added to the stock of assets held. There is some doubt whether all small amounts accruing in this way were in fact added in; and, as a result, the number of savers, and the total change in asset holding, may be understated. But no adjustment to compensate for this would be likely to affect,the general picture, which is of a heavy drain on liquid assets during the year. It is true that the number of savers would be increased, as well as their total volume of saving, but there would still be the important fact that some 6 million income units drew down their liquid assets during the year, by an average amount of about £100 each. And the average size of increase in liquid asset holding is clearly less, for all assets except one, than the average size of withdrawal.

Distributions of income units according to the changes in their holdings of National Savings and of total liquid assets are given in Tables 61 and 62.

TABLE 60. *Analysis of Changes in Liquid Asset Holdings*
(*estimated totals for private households in Great Britain, 1951–52*)

Type of liquid asset	*Savers*[1]			*Dissavers*			*Total change*
	No. of income units	*Average per income unit*	*Total saved*	*No. of income units*	*Average per income unit*	*Total dis-saved*	
	million	*£*	*£ mill.*	*million*	*£*	*£ mill.*	*£ mill.*
Post Office Savings Bank deposits	2.2	+ 28	+ 60	3.2	— 62	—200	—140
Trustee Savings Bank deposits...	1.0	+ 55	+ 56	1.0	— 77	— 76	— 20
National Savings Certificates	1.0	+ 39	+ 41	0.8	— 95	— 77	— 36
Defence Bonds	0.03	+150	+ 4	0.1	—450	— 46	— 42
Total National Savings ...	3.5	+ 43	+146	4.6	— 83	—384	—238
Other savings bank deposits	0.6	+ 32	+ 19	0.4	— 90	— 38	— 19
Building society shares and deposits	0.3	+120	+ 33	0.1	—300	— 35	— 2
Co-operative society shares and deposits	0.7	+ 12	+ 8	1.3	— 18	— 22	— 14
Joint stock bank deposits ...	0.6	+194	+116	1.3	—171	—228	—112
Total liquid assets ...	4.4	+ 64	+280	6.2	—106	—665	—385

[1] Accruals of interest (or dividends) on bank deposits and building society and co-operative society shares and deposits (but not on National Savings Certificates) were supposed to be recorded; but some of the smaller amounts may have been overlooked.

TABLE 61. *Change in Stock of National Savings*
(*percentage distributions of income units*)

Type of income unit	*Change in stock of National Savings*								*Those with some change*	
	Increase of			*No change*	*Decrease of*			*Not ascer-tained*	*Mean*	*S.D.*
	£50 & over	*£20–49*	*£1–19*		*£1–19*	*£20–49*	*£50 & over*		*£*	*£*
All income units ...	3	3	9	62	8	5	8	2		
Gross-income									— 29	182
Under £200 ...	1	1	6	75	8	3	5	1	— 31	83
£200—399	2	3	10	65	7	5	7	1	— 20	160
£400—599	5	4	11	52	9	7	9	3	— 26	141
£600—999	6	5	11	50	9	6	12	1	— 30	241
£1,000 and over ...	9	6	11	55	2	3	14	*	— 90	406
Occupation of head										
Self-employed ...	1	2	7	70	7	1	12	*	—130	425
Managers, etc. ...	9	8	10	48	8	4	12	1	+ 11	223
Clerical and sales ...	2	8	12	49	10	8	10	1	— 34	142
Skilled manual ...	4	4	11	58	8	6	7	2	— 16	132
Unskilled manual ...	2	2	11	68	6	3	5	3	— 11	78
Retired, etc. ...	2	1	4	73	7	4	8	1	— 57	216
Age of head										
18—24	4	5	14	63	7	4	3	*	+ 6	43
25—34	4	3	13	57	9	5	8	1	— 19	129
35—44	2	4	11	58	9	6	8	2	— 38	155
45—54	4	2	10	58	8	6	10	2	— 37	244
55—64	3	4	5	65	3	6	10	4	— 32	272
65 and over ...	1	1	4	75	8	3	7	1	— 48	141
Sex of head										
Male	4	3	9	60	8	6	9	1	— 31	183
Female	1	3	10	69	8	3	4	2	— 19	175

* Less than a half of one per cent.

TABLE 62

Change in Total Liquid Asset Holdings
(percentage distributions of income units)

Type of income unit	*Change in total liquid asset holdings*								*Those with some change*	
	Increase of			*No change*	*Decrease of*			*Not ascertained*	*Mean*	*S.D.*
	£100 and over	*£20–99*	*£1–19*		*£1–19*	*£20–99*	*£100 and over*		*£*	*£*
All income units ...	2	7	11	50	9	12	6	3	— 36	261
Gross income										
Under £200 ...	1	2	7	65	9	9	4	3	— 41	233
£200—399	1	5	12	55	9	12	4	2	— 24	199
£400—599	2	10	13	40	10	14	7	4	— 27	215
£600—999	6	11	12	31	10	15	13	2	— 39	251
£1,000 and over ...	17	11	7	26	1	10	23	5	—117	620
Occupation of head										
Self-employed ...	4	6	8	45	8	8	15	6	—173	581
Managers, etc. ...	10	14	6	27	8	16	17	2	— 32	390
Clerical and sales ...	2	12	15	36	11	14	8	2	— 23	173
Skilled manual ...	2	8	14	47	10	13	4	2	— 17	153
Unskilled manual ...	2	4	13	61	8	8	2	2	— 11	92
Retired, etc. ...	2	1	5	60	8	13	7	4	— 57	309
Age of head										
18—24	1	9	17	56	8	7	1	1	+ 3	69
25—34	4	7	15	45	11	12	5	1	— 11	157
35—44	1	7	11	45	12	13	8	3	— 45	186
45—54	3	7	11	46	9	13	9	2	— 45	303
55—64	4	5	7	49	6	16	7	6	— 58	443
65 and over ...	1	3	6	59	9	11	7	4	— 56	266
Sex of head										
Male	3	7	11	46	10	13	7	3	— 39	269
Female	1	5	11	58	9	8	4	4	— 20	226

Both tables show similar trends and they will be discussed together. In the case of National Savings, 38 per cent of income units had some change during the year, 15 per cent of them in an upward direction and 21 per cent in a downward direction (in 2 per cent of cases the direction of movement and its amount were not ascertained). The average reduction, for all those who changed their holding, was £29. In the case of total liquid assets, half the population had some change, 20 per cent upward and 27 per cent downward (with 3 per cent not ascertained) and the average reduction was £36.

When the sample is analysed by income group a tendency is revealed for those with larger incomes to make much bigger changes in each direction than those with smaller incomes. This is reflected in the behaviour of the self-employed and managers, amongst whom the larger incomes occur. The self-employed appear, on balance, to have drawn down both their National Savings and their total liquid assets: the managers succeeded in making a small addition to their National Savings but more than offset this by reducing their other liquid asset holdings.

The analysis by age suggests that the proportion of income units who add to their liquid assets is at its maximum in the younger age groups and falls with increasing age. The proportion who reduce their asset holdings does not change so consistently, and the average change, after becoming increasingly negative up to the age of 45, levels off at that point before resuming its fall later.

Miscellaneous Saving

The other components of saving are so varied and, for the most part, of such infrequent occurrence that no figures have been compiled of their distribution amongst income units. If we take the group as a whole, we find that 39 per cent of income units engaged in some form of miscellaneous saving, of which 15 per cent were on balance positive savers and 24 per cent negative. The average contribution to saving from these sources, for all income units, was £3 per income unit. Analysis of the sample by occupation reveals that the bulk of positive miscellaneous saving was done by the self-employed, amongst whom almost half had positive other savings and a third saved £100 or more. It it clear from this that the most important component of this group of transactions was the profits ploughed back into their businesses by business men and farmers; and it is necessary at this stage to say a few words about how this component was estimated.

The methods used in estimating the saving of the self-employed were somewhat different from those used for other persons. Experience had shown that the self-employed sometimes find it difficult to make a direct estimate of the amount of income ploughed back into the business. The most convenient way to circumvent this problem seemed to be to begin our enquiries by asking how much money had been taken out of the business during the year for living expenses. Having discovered, as far as possible, how much was spent during the year on personal consumption, as well as the amount of contractual saving and change in personal liquid assets, we then asked about the income side; and the volume of miscellaneous saving was deduced as a residual, after allowing for tax liability. This method, it will be noted, runs counter to the general principles on which estimates of saving were made in this survey: but it was thought to be preferable in this case to the direct method. It is possible, however, that the use of this method tends to exaggerate the size of this component of saving : certainly the average miscellaneous saving of the self-employed, at £179 per income unit, it remarkably high. As will be seen below, the estimated savings of the self-employed through this channel constitute one of the largest single elements of personal saving.

Total Saving

When the contractual saving, change in liquid assets and miscellaneous saving of each income unit are added together, we obtain the total saving of

TABLE 63

Total Saving
(percentage distributions of income units)

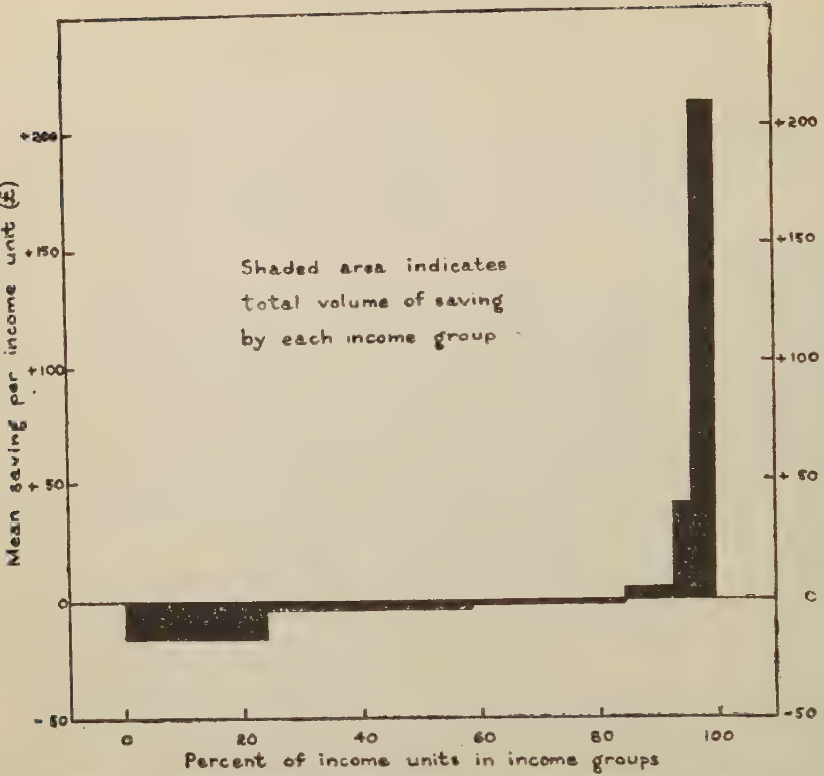
Type of income unit	*Total saving*							*All in group*		
	Saved			*No saving or or dissaving*	*Dissaved*		*Not ascertained*	*No. in sample*	*Mean*	*S.D.*
	£100 and over	*£50–99*	*£1–49*		*£1–49*	*£50 and over*			£	£
All income units ...	5	6	44	13	19	10	3	2598	+ 4	172
Gross income										
Under £200 ...	—	*	39	31	18	9	3	608	— 16	85
£200—399	1	3	54	13	19	8	2	813	— 4	57
£400—599	3	11	46	4	21	11	4	636	— 2	79
£600—799	13	13	34	2	20	15	3	249	+ 5	188
£800—999	29	17	18	2	12	19	3	97	+ 41	162
£1,000—1,499 ...	46	9	9	1	8	20	7	101	+ 89	331
£1,500 and over ...	60	6	2	—	2	17	13	94	+367	1027
Occupation of head										
Self-employed ...	32	5	25	4	9	16	9	230	+136	497
Managers, etc. ...	24	19	22	1	10	21	3	259	+ 7	328
Clerical and sales ...	2	6	47	12	20	11	2	330	— 10	105
Skilled manual ...	3	7	49	10	21	8	2	807	+ 3	60
Unskilled manual ...	1	5	52	13	20	7	2	388	— 2	53
Retired, etc. ...	1	1	37	26	19	11	5	571	— 21	130
Age of head										
18—24	1	3	42	30	18	5	1	296	—	46
25—34	6	7	43	9	24	10	1	456	+ 5	109
35—44	6	9	46	6	17	13	3	492	—	161
45—54	7	9	47	6	17	11	3	499	+ 27	266
55—64	6	5	46	6	20	10	7	382	+ 7	196
65 and over ...	1	2	38	27	16	12	4	473	— 19	138
Sex of head										
Male	6	8	42	10	19	12	3	1918	+ 8	187
Female	1	1	47	22	19	6	4	680	— 8	111

* Less than a half of one per cent.

that income unit. Our estimates of the distribution of income units according to this characteristic, and of their average total saving, are presented in Table 63. Of all income units taken together, 55 per cent saved something in 1951–52, 29 per cent drew down their savings and 13 per cent made no change (3 per cent were unwilling to give sufficient information about one or other component of saving to enable their total saving to be calculated). The savers saved about £50 each and the dissavers drew down their savings by £81 each on the average; and the net effect of all their transactions was an average saving by all income units of £4 per income unit.

Total saving shows a very clearly-marked tendency to vary with income. The variation takes two forms: firstly, the average level of saving increases as income increases, ranging from negative values for those with the lowest incomes to a large positive value for those with incomes of £1,500 a year and over (see Chart 21); secondly, the absolute variation of saving about its mean value increases as income increases. The latter effect can be seen both from the frequency distributions of the different income groups and from their standard deviations. In each of the income groups except the lowest (under £200) the

CHART 21. Total Saving by Income Groups



proportion of savers is in the region of 60 per cent, but the average saving per saver increases steadily as income rises. The proportion of dissavers is similarly fairly stable and the average amount dissaved, though showing no significant trend for incomes below £600, rises steadily from that point onwards. These divergent movements are reflected in the growth of the standard deviation of saving which, from a level of less than £100 for income groups below £600, rises to over £1,000 for those with incomes of £1,500 and over.

Why should upper income groups show so much more deviation in their saving behaviour than lower income groups ? The explanation lies, I think, in the fact that saving is, not just conceptually, but to a large extent in reality, a residual. This may not be true of contractual saving, which arises from a deliberate act of choice in much the same way as any form of expenditure on consumption. But contractual saving is only part of total saving; and it is perfectly possible, and indeed quite common, for people who are saving contractually to be dissaving in total. (According to the survey figures, nearly a third of contractual savers were dissaving in total). Total saving,

NOTE.—The income groups are arranged in order of size of income from left to right, the width of each group being proportional to its number in the population.

though biased upwards by its contractual element, is determined, in the final analysis, by the balance between net income and consumption; and its variations are therefore the consequence of the variations in these much larger quantities. If, for example, we assume that net income is constant for all income units in a given gross income group, then the standard deviation of saving for each income group will be equal to the standard deviation of consumption for that group. And since the standard deviation of consumption in each income group tends to vary directly with the average level of consumption of that group, which in turn varies directly with its average net income, it follows that the standard deviation of saving will vary more or less in proportion to net income.[1]

While the level of income in itself is clearly one of the principal causes of changes in the degree of variation of saving behaviour, it is not the only cause. This is apparent from the first section of Table 64, which shows distributions of income units within various gross income groups according to the proportion of net income saved. If the degree of variation in saving increased in strict proportion to the increase in income level there would be no evidence of differences between income groups in this table. As it is, there is still a clearly-marked tendency for the proportion of net income saved to diverge in each direction as income rises. There seem to be two possible explanations of this phenomenon. The first is that people with larger incomes generally have larger stocks of liquid and other assets (see Table 50 in the previous paper in this series) and, perhaps partly in consequence of this, much of their spending goes by fits and starts. In other words, even if they had a constant income they would be inclined to vary their rate of spending from year to year to a greater proportionate extent than those with lower incomes. But, in point of fact, people in the upper income groups do not have stable incomes; a large number of them are in receipt of entrepreneurial incomes (profits of unincorporated businesses and professions), which fluctuate to a much greater degree from year to year than the incomes of employees. This is the second possible explanation of the increasing proportionate divergence of saving behaviour at upper income levels and it is, in my opinion, the more important. It is a noteworthy feature of the small business man that his standard of living is related much more to his long-term income expectations than to his immediate receipts; and since the latter often fluctuate quite considerably from year to year his personal saving, a balancing item, frequently shows marked divergences from one year to the next.

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[1] In formal terms, the assumption is that in the ith gross income group the average level of net income, Yi, is a constant. Now for each income unit in the ith gross income group $Si = Yi - Ci$, where S and C stand for saving and consumption. Since Yi is a constant, both the variance of Yi and its covariance with Ci equal zero. Hence, the variance of Si equals the variance of Ci. In practice, Yi is not constant, especially for the topmost open-ended income group, and is usually positively correlated with Ci. These two influences partly offset one another, so that the variances of Si and Ci are often very similar. Compare, for example, the standard deviations of saving in different gross income groups, shown in Table 63, with the standard deviations of consumption in the same groups, shown in Table 69.

TABLE 64

Total Saving as a Proportion of Net Income
(percentage distributions of income units)

Type of income unit	*Percentage of net income saved or dissaved*						*Total*
	Saved		*Less than 5% saved or dissaved*	*Dissaved*		*Not ascertained*	
	15% & over	*5–14%*		*5–14%*	*15% & over*		
All income units	8	20	48	10	11	3	100
Gross income							
Under £200	4	13	57	7	16	3	100
£200—399	6	19	54	10	9	2	100
£400—599	8	25	43	11	9	4	100
£600—999	16	26	33	10	12	3	100
£1,000 and over ...	42[1]	17	11	7	13	10	100
Occupation of head							
Self-employed	35	10	28	4	14	9	100
Managers and technical	21	30	20	8	18	3	100
Clerical and sales ...	6	26	44	11	11	2	100
Skilled manual	7	23	50	11	7	2	100
Unskilled manual ...	5	18	57	9	9	2	100
Retired and unoccupied	3	11	53	9	19	5	100
Age of head							
18—24	5	14	63	10	7	1	100
25—34	10	22	48	10	9	1	100
35—44	8	28	39	12	10	3	100
45—54	12	23	43	9	10	3	100
55—64	11	18	42	10	12	7	100
65 and over	4	10	57	6	19	4	100
Sex of head							
Male	10	20	46	10	11	3	100
Female	5	18	53	8	12	4	100

[1] 30 per cent saved 25 per cent of net income or more ; 14 per cent saved 50 per cent or more.

From the second section of Table 63, in which income units are classified according to occupation, it appears that the self-employed make by far the largest average contribution to total saving, most of which, as we shall see, is due to their business saving. Managers, on the other hand, make remarkably little contribution and a very large proportion of them appear to be dissaving both absolutely and in relation to net income. The average saving of clerical and sales workers, which is negative, is evidently much influenced by the large dissavings of a fairly small section of that group. Manual workers as a group are just about in balance, neither saving nor dissaving very heavily; and the retired and unoccupied are, on the average, fairly substantial dissavers. Nearly one in five of this last group are dissaving to the extent of 15 per cent or more of their net income.

The variations in saving behaviour by age groups do not seem to follow a clear pattern. The first group, under 25, contains a large proportion who neither save nor dissave, and the savings of those who do save are offset by the withdrawals of the remainder. Of the remaining groups aged less than 65, only one makes any appreciable contribution to saving, namely, those aged 45–54. This group contains many married couples without dependent children ; its members frequently have higher incomes than those in the younger groups and less expenditure, as for example, in the purchase of durable goods; and it is the group with the highest proportion of self-employed. Each of these factors probably has some influence on the result.

One interesting feature of the age analysis in Table 64 is the steady growth in the proportion of income units whose dissaving amounts to 15 per cent of more of their net income. If we describe these people as 'heavy' dissavers it seems that the tendency to indulge in heavy dissaving increases with age over the whole span of active adult life.

TABLE 65

Saving Expectation[1]

(*percentage distributions of income units*)

Type of income unit	*Saving expectation*				*Total*	
	Expect to save	*Expect to break even, not to save*	*Expect to dissave*	*Others and not stated*	*Per cent*	*No. in sample*
All income units ...	27	48	13	12	100	2598
Gross income						
Under £200	15	52	18	15	100	608
£200—399	27	48	13	12	100	813
£400—599	32	48	10	10	100	636
£600—999	37	39	14	10	100	346
£1,000 and over ...	40	36	12	12	100	195
Occupation of head						
Self-employed ...	26	42	15	17	100	230
Managers and technical	35	41	13	11	100	259
Clerical and sales ...	43	39	11	7	100	330
Skilled manual ...	34	46	10	10	100	807
Unskilled manual ...	24	56	8	12	100	388
Retired and unoccupied	6	53	25	16	100	571
Age of head						
18—24...	52	35	3	10	100	296
25—34...	39	42	9	10	100	456
35—44...	28	48	10	14	100	492
45—54...	25	50	14	11	100	499
55—64...	18	51	18	13	100	382
65 and over	6	56	24	14	100	473
Sex of head						
Male	28	47	13	12	100	1918
Female	25	48	14	13	100	680
Saving in past year						
Saved £50 and over	43	38	9	10	100	347
Saved £25—49 ...	32	45	11	12	100	251
Saved £1—24... ...	25	55	7	13	100	780
No saving or dissaving	20	61	6	13	100	341
Dissaved £1—24 ...	29	45	16	10	100	283
Dissaved £25 and over	24	34	30	12	100	498
Income expectation for coming year						
Rise	38	42	9	11	100	700[2]
No change	24	51	14	11	100	1400[2]
Fall	17	50	19	14	100	300[2]

[1] The question was: 'Do you think during the coming year you will save anything out of your income, or do you expect to draw on past savings? What do you expect to do?'

[2] Approximate number in the sample.

Saving Expectations

An interesting comparison can be made between our estimates of the actual saving of each income unit in the year preceding the date of interview and the head of the income unit's expectation of its saving prospects for the coming year. The question about expectations was a very broad one, the text of which is given as a footnote to Table 65; and it would obviously be very unwise to place any great reliance on the answers given. The question was asked at the end of the interview, after a searching inquiry into all the income unit's capital transactions during the preceding year. To that extent the person answering the question might be aware of the sort of things we were talking about; but it would not be surprising if many of the people interviewed would be confused if they had to explain in detail what transactions should be counted as saving and what as dissaving.

Nevertheless the figures in Table 65 are worth studying to see whether there is a broad correspondence between saving expectations and saving behaviour. For the whole sample, the results show 27 per cent of income units who expected to save, 48 per cent who expected to break even or not to save, 13 per cent who expected to dissave and 12 per cent who were unable to make a prediction or gave other vague answers. If we compare these figures with those shown in Table 64 we find a good measure of agreement; the percentage whose positive or negative saving in 1951–52 was less than 5 per cent of their net income is exactly the same as the percentage who expected to break even or not to save in the coming year; and the percentage who saved 5 per cent or more in 1951–52 is almost identical with the percentage who expected to save in the coming year. The agreement amongst the other categories is not so good; but the general impression is that our estimates of the pattern of saving behaviour are reasonably consistent with saving expectations. This does not mean that the correspondence is exact for each income unit: as the figures in one section of Table 56 show, quite large proportions of the people who saved in 1951–52 expected to dissave or to break even in the following year, and more than a quarter of those who drew down their savings in 1951–52 expected to save in the following year. But this is not necessarily an inconsistency, since it is quite probable that many people who save in one year dissave in the following, and *vice versa.*

The comparison can also be made separately for each income group and for other categories. It is interesting to note that the proportion who expect to save increases steadily with income, while the expectation of dissaving remains fairly constant over income groups. The self-employed are not as optimistic of their saving prospects as they ought to be on past performance, but a bias towards pessimism seems to be an occupational characteristic of this group. The expectations of the retired and unoccupied, on the other hand, the balance of which is in the direction of dissaving, are probably fully justified.

The analysis of saving expectations by age shows a clearly defined tendency for the younger groups to be optimistic and the older groups pessimistic : in each group after the youngest the percentage who expect to save is less than in the preceding group and the percentage who expect to dissave is greater. There is no such obvious trend in the figures of actual saving performance by different age groups (see Table 64), and it is evident that saving expectations are more closely related to age than to saving experience. The youngest group seems to be especially over-optimistic about its prospects of saving.

In the final section of Table 65 the sample is analysed according to income expectations, and the figures show an association between income expectation and saving expectation, although the association is perhaps not as close as might have been expected.

SUMMARY OF SAVING AND ITS COMPONENTS

We can now bring together all the separate pieces of information on total saving and its components to see whether they exhibit any sort of order or system. The synthesis can be made in two related forms : in the first, which is shown in Table 66, we use averages, and in the second, in Table 67, we use aggregates. The averages apply to all the income units in each category, irrespective of whether they saved in each way or not ; and the aggregates are derived by multiplying each average by the estimated number of income units of each type occurring in the whole private household population.

We have already noted earlier how the total volume of contractual saving runs far in excess of total saving : average contractual saving per income unit is £18 compared with average total saving of £4. The negative balance of £14 per income unit is made up of withdrawals of liquid assets of £17 per income unit, partly offset by positive other saving of £3 per income unit. It is interesting to note that when income units are classified by gross income the same tendency is exhibited for positive contractual saving to increase side by side with an increasing negative change in liquid assets, as income rises. Moreover, miscellaneous saving, though moderately negative for income groups below £800, shows a similar tendency to increase in a positive direction as income rises above this level. The apparent consistency of these movements of each component is very striking.

Total saving per income unit, as noted earlier, rises from a negative figure for the lower income groups to increasing positive values for the upper groups. This finding conforms with the results of all previous surveys of saving behaviour and, incidentally, with the normal assumptions of economic theory. The result is nevertheless of considerable interest, since these are the first national figures ever compiled for Great Britain, and they may help to resolve some of the anxious doubts raised by previous discussions of this problem. Colin Clark, for example, argued that in the 1930's the savings of the working and middle classes were more than enough to account for total estimated personal saving; from which he concluded that 'large private incomes have ceased to count as a source of saving '.[1] Barna, in his study of income and outlay in 1937, followed the same line of reasoning up to a point, but was more cautious in his conclusion. He assumed that each income group was making

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[1] Colin Clark, *National Income and Outlay* (1938), p. 191.

TABLE 66

Components of Saving

(average per income unit in each group to nearest £)

Type of income unit	*Contractual saving*				*Change in liquid assets*	*Miscellaneous saving*	*Total saving*
	Life assurance	*Superannuation*	*Mortgage repayments*	*Total*			
All income units	+11	+ 3	+ 4	+ 18	— 17	+ 3	+ 4
Gross income							
Under £200	+ 3	*	+ 1	+ 4	— 13	— 7	— 16
£200—399	+ 7	+ 1	+ 2	+ 10	— 11	— 3	— 4
£400—599	+13	+ 5	+ 3	+ 21	— 16	— 7	— 2
£600—799	+16	+ 6	+ 8	+ 30	— 20	— 5	+ 5
£800—999	+21	+11	+14	+ 46	— 47	+ 42	+ 41
£1,000—1,499	+46	+11	+24	+ 81	— 71	+ 79	+ 89
£1,500 and over	+86	+26	+28	+140	—103	+330	+367
Occupation of head							
Self-employed	+32	+ 1	+14	+ 47	— 90	+179	+136
Managers and technical	+34	+23	+14	+ 71	— 23	— 41	+ 7
Clerical and sales	+ 8	+ 5	+ 5	+ 18	— 15	— 13	— 10
Skilled manual	+10	+ 2	+ 3	+ 15	— 9	— 3	+ 3
Unskilled manual	+ 8	+ 1	+ 1	+ 10	— 4	— 8	— 2
Retired and unoccupied	+ 4	*	*	+ 5	— 22	— 4	— 21
Age of head							
18—24	+ 3	+ 1	—	+ 4	+ 1	— 5	*
25—34	+11	+ 4	+ 5	+ 20	— 6	— 9	+ 5
35—44	+17	+ 5	+ 6	+ 28	— 24	— 4	*
45—54	+16	+ 4	+ 7	+ 27	— 24	+ 24	+ 27
55—64	+12	+ 5	+ 3	+ 20	— 28	+ 15	+ 7
65 and over	+ 4	*	*	+ 5	— 21	— 3	— 19
Sex of head							
Male	+13	+ 4	+ 5	+ 22	— 21	+ 7	+ 8
Female	+ 4	+ 1	+ 1	+ 6	— 8	— 6	— 8
Number of persons							
One	+ 4	+ 2	*	+ 6	— 7	*	— 2
Two	+13	+ 3	+ 7	+ 23	— 34	+ 14	+ 3
Three	+16	+ 5	+ 7	+ 28	— 30	+ 12	+ 10
Four	+18	+ 4	+ 4	+ 26	— 3	— 12	+ 11
Five	+18	+ 7	+ 4	+ 29	— 2	— 9	+ 18
Six or more	+13	+ 3	+ 2	+ 18	— 7	— 2	+ 9
Region							
Scotland	+ 9	+ 3	+ 1	+ 13	— 8	+ 10	+ 15
North of England	+10	+ 3	+ 3	+ 16	— 16	*	*
Midlands and Wales	+ 9	+ 4	+ 4	+ 17	— 11	— 6	*
South of England	+13	+ 3	+ 5	+ 21	— 25	+ 9	+ 5
Size of town							
Conurbations	+12	+ 4	+ 4	+ 20	— 17	— 1	+ 2
Other urban	+10	+ 3	+ 5	+ 18	— 22	—	— 4
Rural	+10	+ 3	+ 3	+ 16	— 7	+ 18	+ 27
Housing tenure							
Owners :							
Without mortgage	+18	+ 6	—	+ 24	— 70	+ 55	+ 9
With mortgage	+18	+ 3	+40	+ 61	— 44	+ 6	+ 23
Tenants	+12	+ 3	—	+ 15	— 8	— 8	— 1
Non-heads of households	+ 4	+ 2	—	+ 6	— 5	+ 4	+ 5

* Less than 10s. per income unit (plus or minus).

TABLE 67

Components of Saving
(*estimated totals for private households in Great Britain, 1951–52, £ million*)

Type of income unit	*Contractual saving*				*Change in liquid assets*	*Mis-cellaneous saving*	*Total saving*
	Life assurance	*Superannuation*	*Mortgage repayments*	*Total*			
All income units	+240	+70	+85	+395	—385	+ 80	+ 90
Gross income							
Under £200	+ 14	+ 1	+ 4	+ 19	— 71	— 33	— 85
£200—399...	+ 56	+10	+12	+ 78	— 82	— 26	— 30
£400—599...	+ 72	+25	+21	+118	— 90	— 38	— 10
£600—799...	+ 30	+12	+15	+ 57	— 38	— 9	+ 10
£800—999...	+ 13	+ 7	+10	+ 30	— 30	+ 25	+ 25
£1,000—1,499	+ 23	+ 5	+12	+ 40	— 35	+ 40	+ 45
£1,500 and over	+ 32	+10	+11	+ 53	— 39	+121	+135
Occupation of head							
Self-employed	+ 45	+ 1	+20	+ 66	—126	+250	+190
Managers and technical ...	+ 47	+31	+19	+ 97	— 31	— 58	+ 8
Clerical and sales... ...	+ 22	+14	+12	+ 48	— 39	— 37	— 28
Skilled manual	+ 78	+20	+24	+122	— 72	— 26	+ 24
Unskilled manual ...	+ 28	+ 4	+ 4	+ 36	— 15	— 27	— 6
Retired and unoccupied...	+ 20	*	+ 6	+ 26	—102	— 22	— 98
Age of head							
18—24	+ 7	+ 4	—	+ 11	+ 4	— 14	+ 1
25—34	+ 45	+15	+17	+ 77	— 23	— 32	+ 22
35—44	+ 71	+20	+22	+113	— 99	— 14	*
45—54	+ 66	+16	+31	+113	— 98	+100	+115
55—64	+ 37	+15	+12	+ 64	— 87	+ 45	+ 22
65 and over	+ 14	*	+ 3	+ 17	— 82	— 5	— 70
Sex of head							
Male	+220	+63	+80	+363	—343	+113	+133
Female	+ 20	+ 7	+ 5	+ 32	— 42	— 33	— 43
Number of persons							
One	+ 33	+13	+ 3	+ 49	— 60	— 7	— 18
Two	+ 77	+18	+44	+139	—205	+ 83	+ 17
Three	+ 60	+19	+23	+102	—108	+ 43	+ 37
Four	+ 46	+10	+10	+ 66	— 6	— 29	+ 31
Five	+ 17	+ 8	+ 4	+ 29	— 2	— 9	+ 18
Six or more	+ 7	+ 2	+ 1	+ 10	— 4	— 1	+ 5
Region							
Scotland	+ 20	+ 6	+ 6	+ 32	— 19	+ 24	+ 37
North of England ...	+ 59	+18	+15	+ 92	— 90	— 2	*
Midlands and Wales ...	+ 47	+18	+19	+ 84	— 53	— 28	+ 3
South of England ...	+114	+28	+45	+187	—223	+ 86	+ 50
Size of town							
Conurbations	+ 95	+28	+29	+152	—133	+ 1	+ 20
Other urban	+103	+32	+42	+177	—223	+ 6	— 40
Rural	+ 42	+10	+14	+ 66	— 29	+ 73	+110
Housing tenure							
Owners :							
Without mortgage ...	+ 47	+18	—	+ 65	—184	+146	+ 27
With mortgage ...	+ 37	+ 6	+85	+128	— 87	+ 9	+ 50
Tenants	+134	+34	—	+168	— 87	— 96	— 15
Non-heads of households	+ 22	+12	—	+ 34	— 27	+ 21	+ 28

* Less than £500,000 (plus or minus).

some positive contribution to saving, but that upper income groups were saving a greater proportion of their gross incomes than lower income groups.[2] It seems, from the evidence of this survey as well as of the American surveys made in pre-war years, that Barna was nearer to the truth than Colin Clark; but even he did not allow for the possibility that the lower income groups were actually dissaving on balance. It must be remembered in this connection that the lowest income group does not consist mainly of active workers but predominantly of the retired and unoccupied. Some members of this group have fairly substantial assets on which to draw while very few are in a position to save more than a few pounds. The net balance of their saving as a group, therefore, tends to be negative.

The survey shows, I think conclusively, that it is not legitimate to attribute to the working and middle classes the full amount of their contractual saving, since allowance must be made for the liquidation by these classes of other assets. Nor can they be credited with the total increase, if any, in Post Office and Trustee Savings Bank deposits, since these deposits do not belong to the working and middle classes alone. What the survey does not tell us, however, is whether the propensity to save continues to increase idefinitely as income increases. All we can say is that, within the limits covered by the survey, the figures show a rising propensity to save at higher and higher levels of income, and that it would be rather surprising if this trend were to be reversed at any point. But, as we shall see below, there is a strong suggestion from our figures that the proportion of gross income saved does not surpass, under present conditions, a fairly low ceiling level.

A very large contribution to total saving is made by contractual saving, on the one hand, and the business saving of the self-employed, on the other. If it were possible to take the fruits of these two alone, without suffering any losses in other directions, total saving would amount to about £650 million on our definition, or £900 million on the national income definition. The principal losses occur, according to our figures, through the drawing down of liquid assets.

An interesting comparison can be made of the saving behaviour of the self-employed and managers, groups which are of similar size and average income. Each group saves about the same in life assurance and mortgage repayment but the superannuation contributions of the managers bring their total contractual saving up to a point about half as much again as the contractual saving of the self-employed; and if allowance were made for the superannuation contributions paid by employers on behalf of managers, their total contractual saving would amount to at least twice as much as the contractual saving of the self-employed. It might have been expected that the self-employed would make up for their lack of superannuation arrangements by paying more life assurance: but this is evidently not so. Where the self-employed do compensate, and indeed over-compensate, is by ploughing back profits into their businesses, with the consequences already noted for their miscellaneous saving. It is, of course, quite understandable that the self-employed should prefer to use their savings for developing their own businesses than for purchasing extra life assurance : their businesses are, after all, not merely a form of investment to them but much else besides.

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[2] Tibor Barna, *Redistribution of Incomes through Public Finance in 1937* (1945), p. 158.

It is rather difficult to understand why the managers, whose average gross income exceeds £1,000, and whose contractual saving is £71 per income unit, should be saving so little as £7 per income unit in total. The principal influence at work here is evidently from the side of miscellaneous saving; and a scrutiny of the forms relating to a sub-sample of managers suggests that it is due to the effect on managers of the receipt of windfalls. Managers receive windfalls much more frequently than other groups (19 per cent had received a windfall in 1951–52 compared with less than half that proportion amongst the rest of the population), and a large proportion of their windfalls are legacies or gifts. As we shall see below, there is a tendency for people who receive windfalls to go out and spend part of the money; and this is certainly true of managers. It seems probable that managers, whose prospects are fairly secure both during their active years and after retirement, regard a legacy or other windfall as an opportunity to improve their immediate standard of living, especially by the purchase of durable goods. This tendency is doubtless present with all sections but the managers are particularly affected by it.

We shall pass over some of the other analyses presented in Tables 66 and 67 and conclude by referring to the final section, in which income units are classified according to their housing tenure. Here it becomes clear how large an influence is exercised on an individual's saving by the necessity of having to pay off a mortgage. Mortgagors are estimated to pay off £40 a year on the average and, although they draw down their liquid assets by more than this, their total saving is still £23 per income unit. This result could, of course, be attributable to other factors, such as business saving by self-employed people amongst the mortgagors; but the proportion of the self-employed in this group is actually less than amongst those who own their houses without a mortgage (though more than amongst tenants) and the other saving of the mortgagors is nowhere near so heavy as the other saving of this latter group. There seems little doubt, therefore, that people who have mortgages are better savers than people without mortgages, though not necessarily to the full extent of their mortgage payments.

Consumption Expenditure

Having completed our description of saving, we can proceed to say a few words about consumption and, in particular, about one of its components —expenditure on durable goods. We shall then be in a position to relate together the three constituent parts of gross income—tax, saving and consumption—and to consider some of the implications of our figures.

Total Consumption

In this survey consumption is a residual derived by subtracting saving and tax liability from gross income. It it not likely, however, that it will be so unreliable on that account, since both the subtractive items are usually smaller than consumption itself. Nevertheless, the accuracy of our estimates of consumption is entirely dependent on the accuracy of our estimates of the three items from which it is derived.

The distribution of income units according to their total consumption expenditure is given in Table 68. Average consumption expenditure per income unit is £7 a week but the amount varies widely: at one end of the scale, 7 per cent of income units spent less than £100 in the year and, at the other, 6 per cent spent £700 or more. The great majority of the former group are retired people, for the most part single old age pensioners. The latter

TABLE 68

Total Consumption Expenditure
(percentage distributions of income units)

Type of income unit	*Consumption expenditure*								*All in group*	
	Under £100	*£100–199*	*£200–299*	*£300–399*	*£400–499*	*£500–699*	*£700 and over*	*Not ascertained*	*Mean* £	*S.D.* £
All income units	7	18	19	21	13	13	6	3	365	278
Gross income										
Under £200	30	60	5	1	*	1	*	3	137	94
£200—399	—	8	50	35	4	1	*	2	291	81
£400—599	—	—	2	30	43	19	2	4	449	102
£600—799	—	1	2	3	5	73	13	3	608	198
£800—999	—	2	—	1	7	42	45	3	695	165
£1,000—1,499	—	—	2	7	5	17	62	7	830	345
£1,500 and over	—	—	—	7	2	3	75	13	1423	1023
Occupation of head										
Self-employed	*	9	14	20	13	18	17	9	534	333
Managers, etc.	*	1	2	10	13	36	35	3	773	630
Clerical and sales	3	20	23	21	12	11	8	2	364	224
Skilled manual	1	7	19	29	21	18	3	2	393	155
Unskilled manual	3	17	30	26	12	9	1	2	312	141
Retired, etc.	28	41	15	5	2	2	2	5	189	204
Age of head										
18—24	6	40	34	12	3	3	1	1	232	87
25—34	1	8	20	27	18	20	5	1	412	182
35—44	1	6	11	27	17	26	9	3	463	275
45—54	4	7	17	24	19	16	10	3	451	311
55—64	8	15	21	23	12	9	5	7	360	350
65 and over	25	37	16	8	5	3	2	4	219	249
Sex of head										
Male	2	10	18	25	17	17	8	3	422	285
Female	22	41	22	7	2	2	*	4	188	158
Number of persons										
One	19	34	28	10	3	2	1	3	206	158
Two	*	15	18	23	17	14	9	4	423	328
Three	—	3	13	32	19	22	9	2	466	232
Four	—	1	7	31	26	19	11	5	501	299
Five	—	1	12	23	17	37	9	1	509	284
Six or more	—	—	9	16	25	43	5	2	492	156

* Less than a half of one per cent.

group, on the other hand, is drawn more widely from different sections of the population, although it contains a considerably greater proportion of managers and of self-employed than of other sections.

As one would expect, consumption is closely related to gross income: there is some scatter of consumption within income groups, but in general its coefficient of variation (standard deviation divided by mean) within income groups is less than one-half. The average level of consumption in each income group is determined by the amount of taxation and saving appropriate to that group; and since both of these operate in such a way as to reduce differences between income groups, we find that consumption is much more equally distributed than gross income. This is reflected in the standard deviation of consumption, which is less than half the standard deviation of gross income.

The consumption expenditure of single people is, on the average, less than half that of married couples; and, as the number of children in the family increases up to three, total consumption increases, but at a diminishing rate. Families with four or more children appear to spend rather less than those with two or three children, but this is chiefly because they are poorer.

Expenditure on Durable Goods

Although it was not the intention of this survey to collect direct information on consumption expenditure as a whole, it was thought desirable to discover the amount spent by each income unit on certain major durable goods. Such expenditure is likely to influence personal saving, for the reasons mentioned earlier, and it must therefore be regarded as one of the possible explanatory factors of differences in personal saving behaviour. The sort of expenditure that is particularly relevant is the purchase of costly and durable items. For operational purposes, these were defined as cars, motor cycles, television sets, refrigerators and washing machines, and any other durable good whose retail price was £25 or more. In applying the value limit, furniture and carpets were treated as a collective item, so that in all cases where total expenditure on them exceeded £25 they were included. Clothing and soft goods (with the exception of fur coats) were specifically excluded, as well as any goods whose capital cost was charged to a business account.

The expenditure recorded was the total of the retail prices of eligible items, irrespective of whether they had been fully paid for or not, after deducting any receipts from the sale, or trading-in, of durable goods of this sort. If the proceeds of selling goods exceeded the value of goods bought the expenditure on durable goods was counted as zero and a special adjustment was made to the saving account to allow for the receipt of purchasing power from a source other than income. If a durable item was bought on hire-purchase the transaction would have the effect of (*a*) increasing the amount of expenditure on durable goods to the extent of the retail price of the item, and (*b*) decreasing saving to the extent of the hire-purchase debt incurred and still outstanding at the time of interview. In such a case the inverse association

Table 69

Expenditure on Durable Goods[1]
(percentage distributions of income units)

Type of income unit	*Expenditure on durable goods*					*All*		*Those with expenditure*	
	Nil	*Under £50*	*£50–99*	*£100–199*	*£200 and over*	*Per cent*	*No. in sample*	*Mean £*	*S.D. £*
All income units	80	8	8	3	1	100	2598	88	116
Gross income									
Under £200	95	3	1	1	—	100	608	60	38
£200—399	86	7	5	2	*	100	813	63	55
£400—599	71	10	14	4	1	100	636	79	81
£600—799	57	16	18	4	5	100	249	88	77
£800—999	54	13	17	11	5	100	97	104	100
£1,000—1,499	53	8	16	15	8	100	101	151	198
£1,500 and over	47	11	10	17	15	100	94	247	334
Occupation of head									
Self-employed	69	7	12	6	6	100	230	159	229
Managers, etc.	60	14	10	10	6	100	259	123	176
Clerical and sales	78	6	9	4	3	100	330	114	128
Skilled manual	75	11	11	3	*	100	807	66	44
Unskilled manual	82	8	6	3	1	100	388	72	68
Retired, etc.	95	3	2	*	*	100	571	57	45
Age of head									
18—24	83	8	6	2	1	100	296	77	76
25—34	69	11	13	5	2	100	456	83	79
35—44	71	8	14	5	2	100	492	100	121
45—54	77	9	9	3	2	100	499	91	135
55—64	84	8	4	3	1	100	382	90	174
65 and over	94	3	2	1	*	100	473	62	56
Sex of head									
Male	75	9	10	4	2	100	1918	91	120
Female	93	4	2	1	*	100	680	57	48
Number of persons									
One	93	4	2	1	*	100	987	71	71
Two	76	9	9	4	2	100	731	98	140
Three...	69	10	14	5	2	100	412	84	89
Four	64	13	16	4	3	100	297	99	145
Five	65	12	13	10	*	100	115	76	50
Six or more	87	5	8	—	—	100	56	42	35
Housing tenure									
Owners :									
Without mortgage ...	75	10	8	4	3	100	381	120	204
With mortgage	69	12	8	9	2	100	242	94	82
Tenants	77	8	10	3	2	100	1299	84	98
Non-heads of households ...	89	5	4	2	*	100	676	68	65

* Less than a half of one per cent.

[1] The durable goods covered by this table are : cars, motor cycles, television sets, refrigerators, washing machines and any other durable good whose retail price was £25 or more. Furniture and carpets were treated, for the purpose of the £25 limit, as a single collective item. Clothing and soft goods (with the exception of fur coats) were excluded. The expenditure recorded was the total of the retail prices of eligible items after deducting any receipts from the sale, or trading-in, of durable goods of this sort.

between saving and durable expenditure is automatic and inevitable. If the purchase of durable goods were financed by the use of liquid or other assets, this association would again be evident.

Of all income units in the sample, one in five were found to have bought durable goods of the types specified, in the year 1951–52, with an average expenditure of £88 each. Our estimate of total expenditure on durable goods of private households is, therefore, approximately £400 million, or some 4 per cent of personal income. No information exists from which one could make an accurate estimate of the present value of the total stock of goods of this sort in private hands, nor of its rate of depreciation; but, on a very rough calculation, it seems probable that consumers were adding to their stock of durable goods in 1951–52 at a rate of at least £100 million a year.

The analysis by income groups shows that as income rises an increasing proportion of income units buy durable goods of the type specified and that their average expenditure is also greater. Amongst the occupational groups, managers contain the largest proportion who bought durable goods in 1951–52 (40 per cent), but 25 per cent of skilled manual workers were also purchasers. The retired and unoccupied do not buy durable goods to any appreciable extent.

The age groups in which durable goods are most frequently bought are those extending from 25 to 54, and this is reflected in the relative frequency of purchase amongst families with between one and three children under 18. Heads of households, as one would expect, more often buy durable goods than non-heads; and house-owners spend more on the average than tenants.

Summary of Personal Income and Outlay

The division of gross income into tax, saving and consumption is shown in Table 70, where each figure represents the average per income unit of a specified section of the population. The same figures are expressed as percentages of gross income in Table 71. We shall discuss the two tables together.

Average gross income for the whole private household population is estimated at £424 per income unit. Out of this sum £55 is due for direct tax payments, leaving an average net income of £369. After saving £4 and spending £18 on the purchase of durable goods the average income unit has £347 left for ordinary living expenses. In terms of percentages, tax liability amounts to 13 per cent of gross income, and saving and durable expenditure combined to a further 5 per cent, leaving 82 per cent for other consumption.

The analysis by income group shows clearly how both tax and saving increase with income, both absolutely and as a proportion of gross income. Durable expenditure shows the same tendency to increase in absolute value but, as a proportion of gross income, it reaches a ceiling at an income level of £600 and probably declines in the highest income groups. If, however, it were expressed as a proportion of net income it would continue to rise until the penultimate income group.

Amongst the occupational groups, the managers have the highest average

TABLE 70

Income, Saving, and Consumption
(*average per income unit in each group to the nearest £*)

Type of income unit	*Gross income*	*Tax liability*	*Net income*	*Saving*	*Consumption*		
					Total	*Durables*	*Other*
	£	£	£	£	£	£	£
All income units	424	55	369	+ 4	365	18	347
Gross income							
Under £200	125	4	121	— 16	137	3	134
£200—399...	309	22	287	— 4	291	9	282
£400—599...	482	35	447	— 2	449	23	426
£600—799...	682	69	613	+ 5	608	38	570
£800—999...	870	134	736	+ 41	695	48	647
£1,000—1,499	1,171	252	919	+ 89	830	71	759
£1,500 and over	3,064	1,274	1,790	+367	1,423	132	1,291
Occupation of head							
Self-employed	927	257	670	+136	534	49	485
Managers and technical ...	1,026	246	780	+ 7	773	49	724
Clerical and sales... ...	393	39	354	— 10	364	25	339
Skilled manual	430	34	396	+ 3	393	17	376
Unskilled manual ...	333	23	310	— 2	312	13	299
Retired and unoccupied...	180	12	168	— 21	189	3	186
Age of head							
18—24	260	28	232	*	232	13	219
25—34	461	44	417	+ 5	412	26	386
35—44	511	48	463	*	463	29	434
45—54	593	115	478	+ 27	451	21	430
55—64	432	65	367	+ 7	360	14	346
65 and over	221	21	200	— 19	219	4	215
Sex of head							
Male	498	68	430	+ 8	422	23	399
Female	197	17	180	— 8	188	4	184
Number of persons							
One	232	28	204	— 2	206	5	201
Two	517	91	426	+ 3	423	24	399
Three	533	57	476	+ 10	466	26	440
Four	570	58	512	+ 11	501	36	465
Five	599	72	527	+ 18	509	26	483
Six or more	519	18	501	+ 9	492	7	485
Region							
Scotland	367	43	324	+ 15	309	11	298
North of England ...	377	35	342	*	342	17	325
Midlands and Wales ...	421	52	369	*	369	18	351
South of England ...	469	73	396	+ 5	391	21	370
Size of town							
Conurbations	444	54	390	+ 2	388	17	371
Other urban	392	43	349	— 4	353	19	334
Rural	467	88	379	+ 27	352	19	333
Housing tenure							
Owners :							
Without mortgage ...	680	185	495	+ 9	486	30	456
With mortgage ...	607	73	534	+ 23	511	29	482
Tenants	407	34	373	— 1	374	19	355
Non-heads of households	268	32	236	+ 5	231	7	223

* Less than 10s. per income unit, plus or minus.

Table 71

Income, Saving, and Consumption

(*percentage of gross income in each group*)

Type of income unit	*Gross income* %	*Tax liability* %	*Net income* %	*Saving* %	*Consumption*		
					Total %	*Durables* %	*Other* %
All income units	100	13	87	+ 1	86	4	82
Gross income							
Under £200	100	3	97	—13	110	2	108
£200—399	100	7	93	— 1	94	3	91
£400—599	100	7	93	*	93	5	88
£600—799	100	10	90	+ 1	89	6	83
£800—999	100	15	85	+ 5	80	6	74
£1,000—1,499	100	22	78	+ 8	70	6	64
£1,500 and over	100	42	58	+12	46	4	42
Occupation of head							
Self-employed	100	28	72	+15	57	5	52
Managers and technical	100	24	76	+ 1	75	5	70
Clerical and sales	100	10	90	— 3	93	6	87
Skilled manual	100	8	92	+ 1	91	4	87
Unskilled manual	100	7	93	— 1	94	4	90
Retired and unoccupied	100	7	93	—12	105	2	103
Age of head							
18—24	100	11	89	*	89	5	84
25—34	100	10	90	+ 1	89	6	83
35—44	100	9	91	*	91	6	85
45—54	100	19	81	+ 5	76	4	72
55—64	100	15	85	+ 2	83	3	80
65 and over	100	10	90	— 9	99	2	97
Sex of head							
Male	100	14	86	+ 2	84	4	80
Female	100	9	91	— 4	95	2	93
Number of persons							
One	100	12	88	— 1	89	2	87
Two	100	18	82	+ 1	81	4	77
Three	100	11	89	+ 2	87	5	82
Four	100	10	90	+ 2	88	6	82
Five	100	12	88	+ 3	85	4	81
Six or more	100	3	97	+ 2	95	2	93
Region							
Scotland	100	12	88	+ 4	84	3	81
North of England	100	9	91	*	91	5	86
Midlands and Wales	100	12	88	*	88	4	84
South of England	100	16	84	+ 1	83	4	79
Size of town							
Conurbations	100	12	88	+ 1	87	4	83
Other urban	100	11	89	— 1	90	5	85
Rural	100	19	81	+ 6	75	4	71
Housing tenure							
Owners:							
Without mortgage	100	27	73	+ 1	72	4	68
With mortgage	100	12	88	+ 4	84	5	79
Tenants	100	8	92	*	92	5	87
Non-heads of households	100	12	88	+ 2	86	3	83

* Less than a half of one per cent, plus or minus.

level of consumption expenditure; they are followed, at some distance, by the self-employed whose consumption is much reduced by their heavy saving, estimated to amount to 15 per cent of their gross income. Each of these groups spend the same average amount on durable goods, twice as much, in absolute terms, as the clerical and sales group and three to four times as much as the manual workers.

The analysis by age group shows how the proportion of gross income spent on durable goods is higher in the years before 45 than after that age (see Chart 20), and this is probably associated with the finding that expenditure of this sort occupies a particularly large part of the budget of families with one or two children. Consumption expenditure, other than on durable goods, of childless married couples is almost exactly twice as much as the expenditure of single people; and the increase in this form of expenditure as the number of children increases is a steadily diminishing series—£41 extra for the first child, £25 for the second, £18 for the third and £2 for the rest. It is obvious that many families with four or more children are close to or below what would be conventionally regarded to-day as a subsistence level. This is shown by the small average amount spent by such families on durable goods. It is interesting to note, however, that they are able to make a small contribution to saving, this being mainly the outcome of life assurance payments and of the absence of large stocks of liquid assets on which they can draw.

The analysis by region suggests that the Scots save more, and spend less on durable goods, than people living south of the border. Average consumption expenditure, other than on durable goods, increases by £20–25 per income unit between each region as we move from north to south. The higher level of saving in country districts compared with towns is probably much influenced by the saving of farmers, who appear to reinvest much of their total income in their farms.

To conclude the descriptive part of this paper we present in Table 72

TABLE 72

Income and Consumption of Tenths of Income Units, Ranked by Gross Income

Tenths of income units after ranking by gross income	*Percentage of total accounted for by each tenth*						
	Gross income	*Direct taxes*	*Net income*	*Saving*	*Consumption*		
					Total	*Durable*	*Other*
Top	30	62	25	225	23	36	23
2nd	14	10	15	20	15	17	15
3rd	12	7	13	—13	13	13	13
4th	10	5	11	—13	11	12	11
5th	9	4	10	4	10	7	10
6th	8	5	8	3	8	5	8
7th	7	4	7	— 6	7	3	7
8th	5	2	5	—30	6	4	6
9th	3	1	4	—50	4	2	4
Bottom	2	*	2	—40	3	1	3

* Less than a half of one per cent.

our estimates of the proportion of total income, tax, saving and consumption attributable to each tenth of income units, when they are ranked in order of their gross income. The top tenth of the population receive 30 per cent of gross income; they pay 62 cent of direct taxes; and, as a result, their proportion of total net income is reduced to 25 per cent. They save more than twice the total volume of saving (the other nine-tenths of the population dissave the balance) and their consumption expenditure amounts to 23 per cent of the whole. They buy more than a third of all major durable goods (as defined for this survey) but since expenditure on durable goods is only a very small element in total consumption, their proportion of other consumption expenditure is the same—to the nearest percentage point—as of consumption as a whole.

At the other extreme, the lowest income tenth, who are mainly retired and unoccupied, receive 2 per cent of income, pay scarcely any direct taxes, dissave an amount equal to 40 per cent of current net saving and thus raise their proportion of consumption to 3 per cent. Apart from the top tenth, no other tenth has a relative share of consumption which differs by more than one percentage point from its original share of gross income. The share of the top tenth in consumption is 7 per cent less than its share in gross income, and the shares of seven other tenths are each increased by one percentage point. Of the total reduction of seven points in the share of the top tenth, five are due to taxation and two to saving.

B. SOME ANALYTICAL PROBLEMS

The first part of this paper was concerned with presenting the numerical results of the survey. In this part we shall take up some analytical problems which, though touched on earlier, were reserved for fuller treatment here. They are broadly of two types : first, the study of the relation between saving and income, from several angles and using various definitions of both terms; secondly, an examination of the effects of certain other variables which might be expected to modify the primary relation between saving and income.

Saving and Income

The 'Keynesian Revolution' established the importance, both to economic theory and to practical economic policy, of the 'savings function', that is, of the assumed functional relation between saving and income. In its ideal form this relation describes the response of aggregate saving to a change, *ceteris paribus*, in aggregate disposable income. It is impossible, however, to set up suitable experimental conditions in which to measure the interaction of these two variables; and economic statisticians have been compelled, *faute de mieux*, to see what they can do with the data thrown up by historical circumstance or current observation.

Cross-section surveys represent one of the principal sources of such data. With their help we can divide the population into its different component groups and analyse the variations in their saving behaviour. It is true that the information is not always as complete as might be desired : for example, our chief aim is to discover the effect of changes in income, and in other influences, on the volume of saving; but a single survey does not usually provide reliable information for more than one time period. Attempts can be made to obtain indications of the changes that have occurred between one period and another; in this survey people were asked to estimate what had been their change in income between the year before and the most recent year. But such information leans very heavily on memory and is not sufficiently accurate to form the basis of exact analytical treatment. We are therefore compelled, for the most part, to base our analysis on the differences in behaviour of groups whose income levels differ in the same year, rather than on the variations from year to year in the behaviour of a single group whose income fluctuates over time. While this is an important limitation on the usefulness of the results of a single survey there is still much to be gained from the study of these results. Later, when we have the findings of a series of surveys, including re-interviews of the same people in successive years, it should be possible to develop a fuller theory of the dynamic effects of changes in income and other circumstances on saving behaviour.

The first problem is to decide on the form of the assumed functional relation. Practical experience—as well as certain theoretical considerations—suggests that it may be better to assume a function relating saving (S) as a proportion of income (Y) to the logarithm of income—*i.e.*, $S/Y = f(\log Y)$—than to assume a more straightforward relation between saving and income as such—*i.e.*, $S = f(Y)$.[1] There is more stability in S/Y than in S; and the advantage of using $\log Y$ instead of Y is that changes in the savings-income ratio are related to *proportionate* changes in income instead of to *absolute* changes. Moreover, it has been found that a function of the former type approximates more closely to linearity than one of the latter type. We have, therefore, chosen to illustrate the relation between saving and income in that particular form, and the scales used in the charts accompanying this section are arranged accordingly.

Saving can be related either to gross income (before tax) or to net income (after tax). There are no over-riding reasons for preferring the one to the other : some forms of saving, such as superannuation contributions, are normally related directly to the former, and it may be that other forms are also determined to some degree by gross income; but, in general, it seems more reasonable to assume that saving is related to net income. In the first place, however, we shall examine the relation between saving and gross income in order that the effect of taxation itself may be considered.

[1] See Lawrence R. Klein's notes on his studies of survey data in the United States, in *31st Annual Report* of the National Bureau of Economic Research, 1951, p. 41. See also Klein and Morgan : ' Results of Alternative Statistical Treatments of Sample Survey Data ', *Journal of the American Statistical Association*, December 1951, p. 458; and Klein: 'Assets, Debts, and Economic Behaviour ', in *Studies of Income and Wealth, Vol. XIV*.

Dr. Malcolm Fisher, who is making a multivariate analysis of our data, has found a number of similarities between British and American patterns of behaviour.

Saving and Gross Income

In Table 73, we present estimates, derived from the survey, of taxation, saving and durable expenditure, each expressed as a percentage of gross income. From these, in turn, it is possible to derive various combinations, such as those shown in the table. In Chart 22 we have drawn saving as a percentage of gross income in relation to the logarithm of gross income. The line appears to move in a wide arc with a kink in the middle. At low levels of income, average dissaving is a large proportion of gross income, but above £200 a year dissaving becomes relatively small and the line on the chart levels off and moves very close to the zero level for some distance. From the income level of £800, however, it begins to rise again, quite sharply at first, but later with a gradually declining rate of increase as if it were approaching a ceiling. This ceiling appears to be well below 20 per cent of gross income. Obviously, the height of this ceiling is, in part at any rate, dependent on the degree of direct taxation. At higher levels of income, for example, taxation reaches 50 per cent and more of gross income, and so places an absolute limit on the proportion of gross income that can be saved.

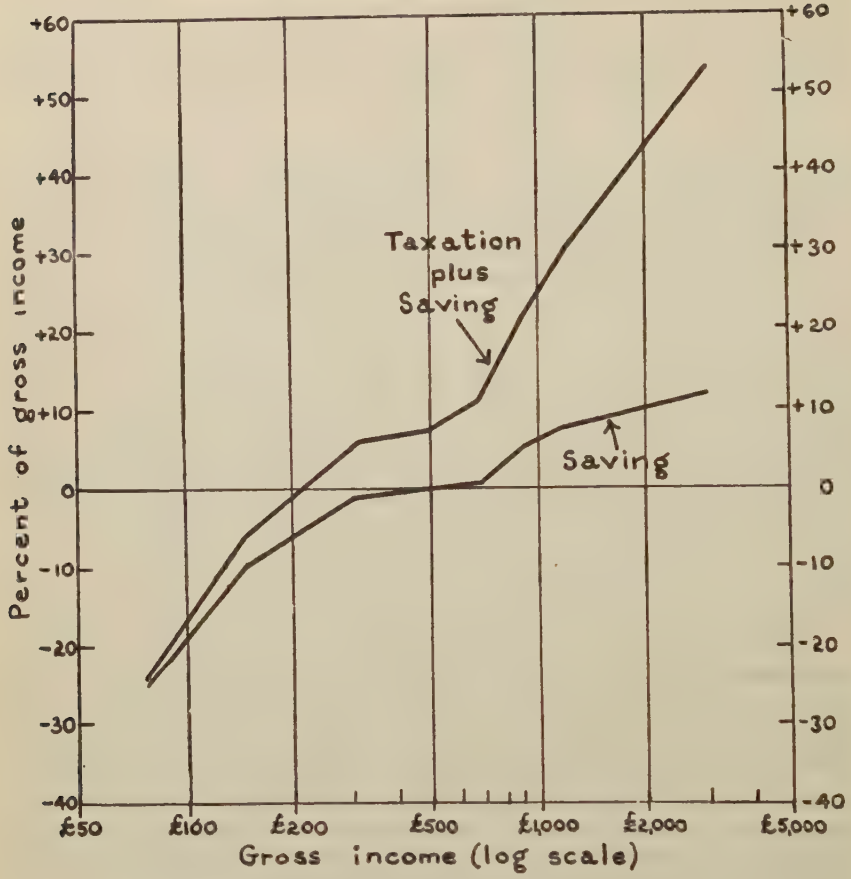
TABLE 73

Taxation, Saving and Durable Expenditure as a Proportion of Gross Income, by Income Groups

Gross income of income unit	*Mean gross income* £	*Per cent of income units* %	*Per cent of total income* %	*Each item expressed as a per cent of gross income*					
				Tax	*Saving*	*Durables*	*Tax plus saving*	*Saving plus durables*	*Tax plus saving plus durables*
Under £100 ...	77	7.8	1.4	1.1	—25.3	1.8	—24.2	—23.5	—22.4
£100—199	149	16.2	5.6	4.0	— 9.9	2.4	— 5.9	— 7.5	— 3.5
£200—399	309	34.8	25.2	7.0	— 1.2	2.9	+ 5.8	+ 1.7	+ 8.7
£400—599	482	25.8	29.4	7.2	— 0.3	4.8	+ 6.9	+ 4.5	+11.7
£600—799	682	8.5	13.7	10.1	+ 0.7	5.6	+10.8	+ 6.3	+16.4
£800—999	870	2.9	5.9	15.4	+ 4.8	5.5	+20.2	+10.3	+25.7
£1,000—1,499 ...	1,171	2.3	6.3	21.5	+ 7.6	6.0	+29.1	+13.6	+35.1
£1,500 and over...	3,064	1.7	12.5	41.6	+12.0	4.3	+53.6	+16.3	+57.9
Total	424	100.0	100.0	13.0	+ 0.9	4.2	+13.9	+ 5.1	+18.1

A characteristic feature of British saving behaviour, if we are to judge from these figures, is that a large proportion of the population belong to income groups whose net contribution to saving is almost negligible. The groups whose incomes range from £200 to £800 embrace more than two-thirds of the population and receive more than two-thirds of total income; and their net saving is practically nil. Real leverage is exercised, on the negative side, by 24 per cent of income units whose gross incomes are less than £200—and who receive 7 per cent of total income—and, on the positive side, by 7 per cent of income units with incomes of £800 or over—who receive 25 per cent of total income.

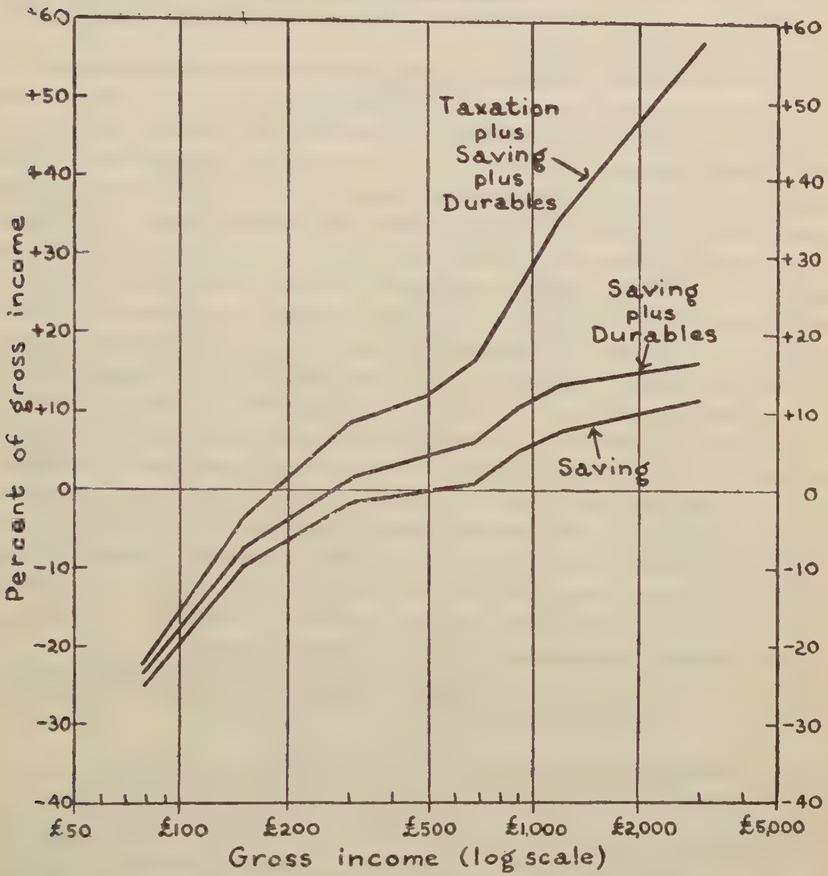
CHART 22. Saving and Saving plus Taxation in Relation to Gross Income



It is natural to assume that the weight of taxation is an important influence on saving. If, on an extreme view, we were to assume that saving and taxation are exact substitutes, we might expect to find a rather regular relation between ' taxation *plus* saving ' and gross income. Our data on this are illustrated in Chart 22, from which it appears that there is quite a smooth relation between these two variables from an income level of £600 upwards; but there is still a substantial kink in the line in the middle income groups. The absence of saving in these groups does not seem to be due to excessively heavy direct taxation; in fact, taxation increases at an unusually slow rate in this part of the income distribution. In the upper income groups, the steep rise in the slope of the curve representing taxation *plus* saving is combined with a flattening of the slope of saving alone, which suggests that, so long as tax rates are maintained at very high levels in the upper income ranges, there is little prospect of any appreciable increase in their rate of personal saving.

The addition of durable expenditure to saving gives us another variable which might be expected to be more regular in its behaviour than saving alone. This variable is illustrated on Chart 23, from which its movements can be judged. The line is certainly smoother, and part of the kink has been ironed out. When taxation is added, however, the kink seems to reappear.

CHART 23. Saving, Saving plus Durables, and Saving plus Durables plus Taxation in Relation to Gross Income



Comparison with the United States

According to our estimates, the saving propensities of the different income groups in Britain were such as to produce a net saving in 1951–52 of £90 million, which, when allowance is made for additions from sources not covered by the survey, is equivalent to total personal saving of about £330 million. Is this a large or a small figure? How does it compare with other countries?

A comparison between global estimates of personal saving, expressed as a proportion of personal income, can be made for those countries which produce estimates of the components of their national income. The most readily available figures are those for the United States, which may serve as a standard of comparison. According to our estimate, personal saving in this country in 1951–52 represented about 3 per cent of gross personal income. In the United States the proportion has varied since the end of the war from 2 per cent to 7 per cent, and shows signs of levelling off, under present conditions, at about the latter figure. On this test British saving is certainly at the lower end of the scale.

A more interesting comparison can be made—in this case, from survey data—of the proportions of income saved by the different income groups in each country. For this purpose, it is necessary to match the income groups of the two countries, one with another. A possible method of doing this would be to relate groups whose real purchasing power was considered to be roughly equal. But this involves making assumptions about the relative purchasing power of the dollar and the pound, and any such assumptions are inevitably rather arbitrary. An alternative, which is in some ways just as interesting and is practically much simpler, is to compare income groups whose relative position in each country is similar. For example, if we express the average income of each income group in country A as a multiple of the average income of the whole population of A, and similarly express the average income of income groups in country B as a multiple of the average income of the whole population of B, we can put both sets of data on the same ' income multiple ' scale and compare the saving propensities of the groups with equivalent income multiples in either country. A set of such income multiples is shown in Table 75, where the mean net income of each income group is expressed as a multiple of mean net income for the whole population. Income multiples have also been worked out for the mean gross and net incomes of Tables 73 and 74, although, for reasons of space, they are not shown.[1]

TABLE 74

Taxation and Saving in Relation to Income, United States, 1950

Gross income of spending unit	*Mean gross income*	*Each item as per cent of gross income*			*Mean net income*	*Saving as per cent of net income*
		Federal tax	*Saving*	*Tax plus saving*		
	$	%	%	%	$	%
Under $1,000 ...	460	—	—61.4	—61.4	460	—61.4
$1,000—1,999 ...	1,490	2.7	— 1.1	+ 1.6	1,460	— 1.1
$2,000—2,999 ...	2,470	4.9	—	+ 4.9	2,350	—
$3,000—3,999 ...	3,450	5.8	+ 4.3	+10.1	3,250	+ 4.5
$4,000—4,999 ...	4,390	7.5	+ 7.2	+14.7	4,070	+ 7.8
$5,000—7,499 ...	5,850	9.7	+ 9.7	+19.4	5,280	+10.7
$7,500 and over	12,590	16.4	+23.0	+39.4	10,520	+27.5
Total ...	3,520	8.5	+ 7.7	+16.2	3,220	+ 8.4

Sources : Gross and net income means and tax taken from Supplementary Table 8 of ' 1952 Survey of Consumer Finances, Part III ', *Federal Reserve Bulletin*, September 1952. The figures for saving are derived by comparing the distribution of total income, as given in Supplementary Table 9, *ibid*, with the distribution of total saving, as shown in Appendix Table 1 of **'1951 Survey of Consumer Finances, Part IV'**, *Federal Reserve Bulletin*, Sept. 1951.

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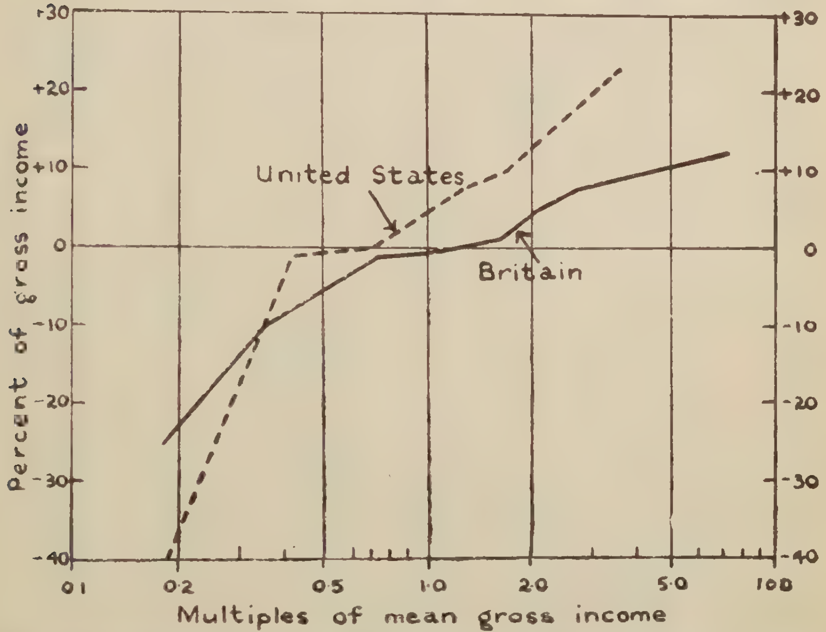
[1] A similar technique for comparing saving propensities in the United States in different years is used by Simon Kuznets in his recent book, *Shares of Upper Income Groups in Income and Savings*.

Data on American saving propensities by income groups have been drawn from reports of the Surveys of Consumer Finances. The latest information available, referring to the year 1950, is reproduced in Table 74. The figures are subject to sampling and other errors and must therefore be treated with due caution; but they may still serve as the basis for a broad comparison with our figures. In Chart 24 we have related, on a common income multiple scale, the saving propensities found by our survey in Britain in 1951–52 and those revealed by the Survey of Consumer Finances for the United States in 1950. Neither set of points fall exactly on a straight line, but, if we ignore the points referring to the lowest group of incomes in each case, which are subject to special influences, the two sets move in approximately the same direction, at first roughly parallel to one another but later diverging. The comparison suggests that over the broad middle range of incomes from about four-tenths of the average to three times the average, the British consumer at each income multiple saves about the same proportion of his gross income as the American consumer whose income multiple is about half as great. For example, a British consumer whose income is twice the British average saves about the same proportion of his gross income as an American whose income is equal to the American average. The two incomes at which this equal saving propensity occurs are, in fact, £850 and $3,500 respectively; and it could be argued that this is merely a reflection of the fact

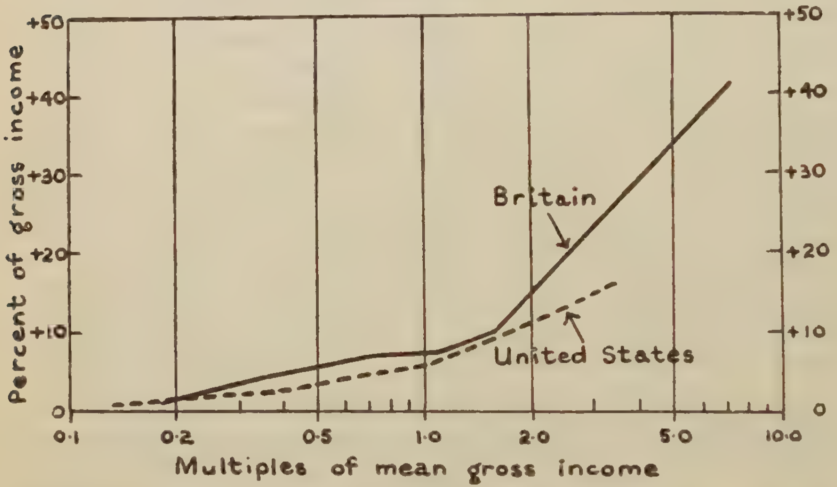
CHART 24. Saving in Relation to Gross Income, Britain 1951–52 and United States 1950



that the real purchasing power of the two incomes is about the same—representing an exchange rate of approximately $4=£1. On the other hand, recent research in America has suggested that the saving propensity of a given income group at any one time or place is governed more by its relative position in its own social context than by its position in relation to incomes at other times or places.[1] There are clearly limits to the extension of this hypothesis, however, and it would be rash to discount entirely the effect of a generally lower standard of living on the average saving propensity of a given population.

More light can, perhaps, be thrown on this matter if we take taxation into account. Chart 25 shows the average rate of direct taxation on each income group for the years in question, in Britain and the United States respectively. The British data cover all direct taxes—including National Insurance contributions—while the American data are limited to Federal income taxes. The latter represent just over three-fourths of the total of direct tax payments and personal contributions for social insurance. When allowance is made for this difference of coverage, there is evidently not a great deal of difference between the average rates of tax in the two countries up to an income level of about twice the average income. But, from this point onwards, average rates of tax in Britain become relatively much heavier than in America. There is clearly a coincidence between the point at which the rate of increase of saving propensities in Britain slows down and the point at which British tax rates begin to rise precipitately. This is further illustrated in Chart 26, where the total weight of tax and saving is related to income multiples for

CHART 25. Taxation in Relation to Gross Income, Britain 1951–52 and United States 1950



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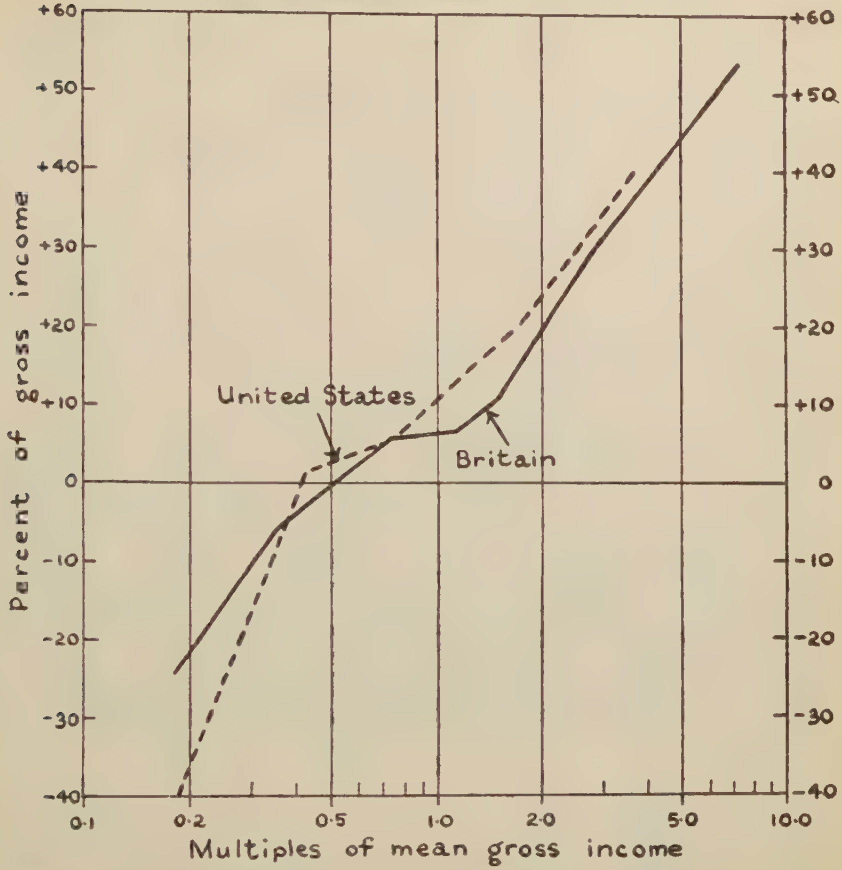
[1] See, amongst others, J. S. Duesenberry, *Income, Saving and the Theory of Consumer Behaviour* (1949), and Kuznets, *op. cit.*

CHART 26. Taxation plus Saving in Relation to Gross Income, Britain 1951–52 and United States 1950



each country. Apart from a sagging of the British line in the middle income groups, the general direction of both lines is very similar; and the proportion of gross income used for consumption by income groups with incomes of twice the average or more is not very different in the two countries.

Saving and Net income

So far, our discussion has been in terms of the relation between saving and gross income. But it may be thought that saving would be likely to be more closely and consistently determined by net income. The data from our survey have, therefore, been reclassified so as to show the saving propensities of income units when grouped according to their net income. In this case the saving of each net income group is expressed as a percentage of its net income. Table 75 contains the result of this analysis and the figures are illustrated in Chart 26. For comparison, we show the saving propensities of American consumers (in 1950) on approximately the same basis. (The

TABLE 75

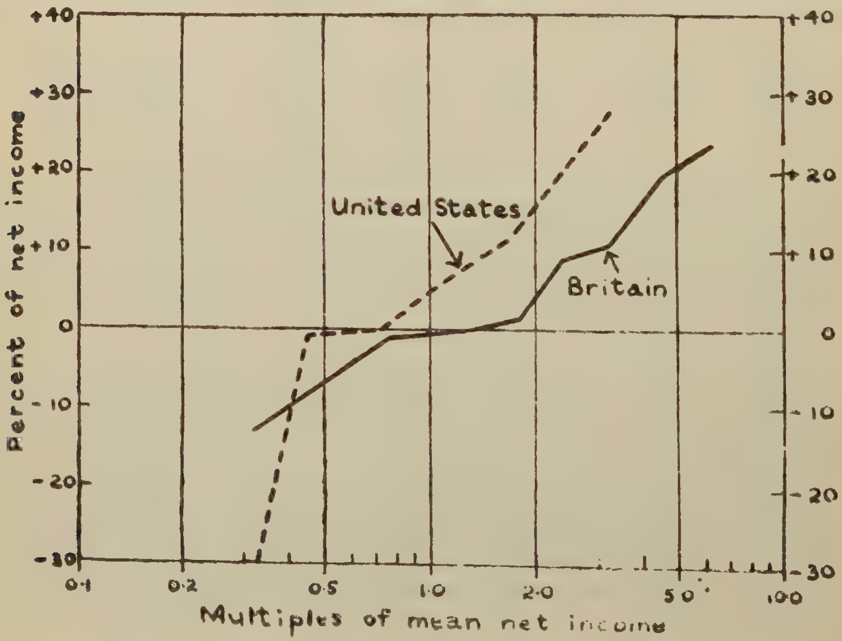
Saving in Relation to Net Income, Great Britain, 1951–52

Net income of income unit	*Mean net income* £	*Mean net income as a multiple of the mean of all income units*	*Mean saving* £	*Saving as per cent of net income* %
Under £200	118	0.32	— 15.7	—13.3
£200—399	303	0.82	— 1.5	— 0.5
£400—599	485	1.31	— 0.1	— 0.0
£600—799	682	1.85	+ 10.7	+ 1.6
£800—999	885	2.40	+ 74.9	+ 8.5
£1,000—1,499 ...	1,180	4.50	+119.4	+10.1
£1,500 and over ...	2,300	6.23	+540.0	+23.4
Total	369	1.00	+ 3.9	+ 1.1

American data could not be reclassified into net income groups, but the net income of each gross income group was used instead).

The chart shows a very smooth relation for America between saving and net income. at least for net incomes exceeding three-quarters of average net income. In Britain, we find again a tendency for those with net incomes below approximately twice the average level to be very poor savers; but this is followed by a rising propensity to save at higher levels. The similarity of the slope of this part of the line to that shown for America suggests that the same forces are at work in both countries; but their effect is clearly postponed in Britain until a much higher income multiple level is reached.

CHART 27. Saving in Relation to Net Income, Britain 1951–52 and United States 1950



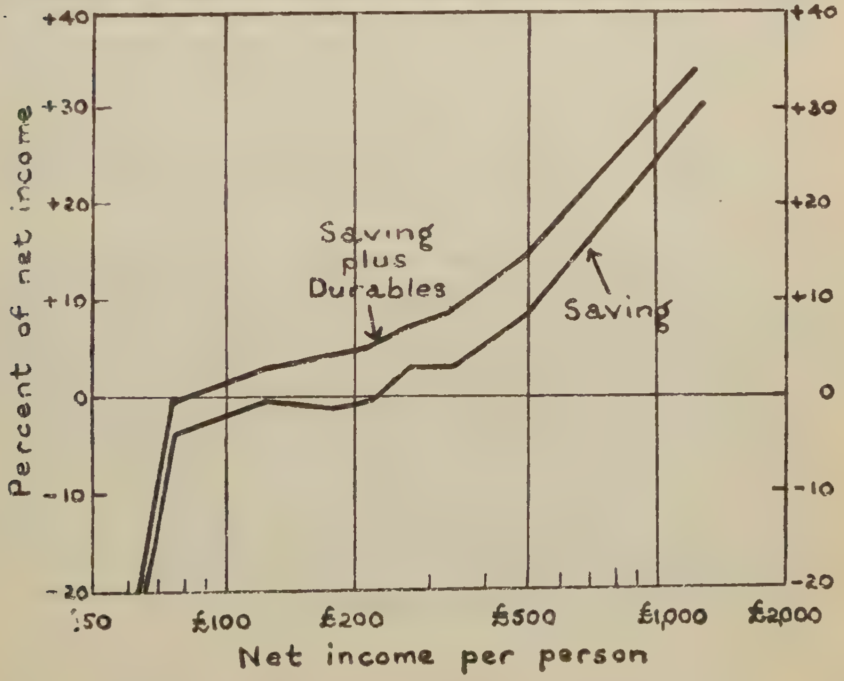
Income may also be adjusted to allow for the number of persons supported, which may be expected to have some effect on the ability to save. The net income of each income unit in our sample was, therefore, divided by the number of persons in the income unit and income units were reclassified according to their net income per person. The average saving per person of each of these groups is shown in Table 76 and the saving propensities are illustrated in Chart 28. The points on the chart now appear to follow a

TABLE 76

Saving and Saving plus Durable Expenditure by Groups of Income units Classified According to Net income per Person

Income units classified by net income per person	*Percent of all income units*	*Estimated mean net income per person*	*Saving*		*Saving plus durable expenditure*	
			Average per person	*As per cent of net income*	*Average per person*	*As per cent of net income*
	%	£	£	%	£	%
Under £50 ...	1	40	— 33.8	—84.5	— 30.1	—75.4
£50—99	23	75	— 2.5	— 3.4	— 0.4	— 0.5
£100—149 ...	26	125	— 0.8	— 0.6	+ 3.8	+ 3.0
£150—199 ...	17	170	— 2.3	— 1.4	+ 7.0	+ 4.1
£200—249 ...	13	220	— 0.6	— 0.3	+ 11.9	+ 5.4
£250—299 ...	8	270	+ 8.2	+ 3.0	+ 20.3	+ 7.5
£300—399 ...	7	340	+ 10.1	+ 3.0	+ 30.2	+ 8.9
£400—749 ...	4	500	+ 41.2	+ 8.2	+ 71.8	+14.4
£750 and over ...	1	1,220	+359.0	+29.4	+415.3	+34.0
Total	100	162	+ 1.75	+ 1.1	+ 9.7	+ 6.0

CHART 28. Saving and Saving plus Durables in Relation to Net Income per Person



reasonably smooth path—if we ignore the lowest income group—and bend gradually upwards as far as the data allow us to plot them. An even smoother relation is obtained by taking account of expenditure on durable goods in addition to saving; and this gives further support to the hypothesis that saving and durable expenditure are closely—and negatively—related.

OTHER INFLUENCES ON SAVING

The analysis up to this point has been directed towards discovering the broad relation between saving and income, on the assumption that income is the primary determinant of saving. Some consideration has been given, also, to the effect on this primary relationship of the number of persons supported; and some of the effects of adding durable expenditure to saving have been noted. But even when all this has been done the variability of the material is only very partially accounted for; and it is clear that many more factors would have to be brought into account if anything like a complete explanation of saving behaviour were to be arrived at.

The only fully satisfactory method of pursuing the analysis into these more complicated regions is to resort to a multivariate study. It is not my purpose to attempt this here;[1] but it may be helpful if we look at some of the data in a more elementary way, simply examining the relation between saving—or saving as a proportion of net income—and each of the other factors in turn.

The first thing to do is to consider what sort of influences might be expected to have some effect on saving. When we relate saving to net income per person we take account, in a rough way admittedly, of influences from both sides of the personal income and expenditure account—*i.e.*, both the amount of net income and the number of people it has to support. If we now find that this goes only part of the way towards explaining saving behaviour we must look for factors which are likely to ' distort ' the ' normal ' relation between income and ' needs '. Such factors can be looked for in two directions: first, there are factors which affect the resources side, upsetting the ' normal ' influence of income as such; and secondly, there are factors which affect the expenditure side, causing unusually heavy or light spending during the period in question.

On the resources side, we may identify three main influences: firstly changes in income, which make the current year's income more or less than the ' normal ' level; secondly, windfall gains, which provide the recipient with a sudden accession of purchasing power; thirdly, the stock of wealth, which, if it is large, enables a person to overspend his income much more freely than if it is small or negligible. On the expenditure side, we may identify expenditure on durable goods, which is a sporadic, ' lumpy ', item of expenditure; and we can also consider the effect of ' unusual ' expenses generally. Figures showing the effect on saving of each of these five factors, taken separately, are presented in Table 77; and Table 78 shows the effect of three of them on the saving-income ratio.

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[1] As already mentioned, such a study is being undertaken at the Institute of Statistics.

TABLE 77

Saving Related to Possible Determinants Other than Income

(percentage distributions of income units)

	Total saving						*All in group*		
	Saved		*No saving or sdi-saving*	*Dissaved*		*Not ascertained*	*Approximate no. in sample*	*Mean*	*S.D.*
	£50 & over	*£1–49*		*£1–49*	*£50 & over*			£	£
Change in income 1950-51 to 1951-52									
Increase of :									
15% or more	15	44	10	17	11	3	320	+ 11	125
5—14%...	12	43	14	19	9	3	550	+ 7	102
Less than 5% change ...	10	45	15	18	9	3	1,280	+ 7	202
Decrease of :									
5%—14%	10	42	9	22	14	3	100	— 1	148
15% or more	8	36	8	26	21	1	180	— 22	178
Windfalls received									
Nil	11	45	15	17	9	3	2,350	+ 8	167
£1—49	7	32	3	40	15	3	150	— 11	108
£50—99	12	15	—	25	48	—	40	— 43	178
£100 and over	8	24	5	14	42	7	60	—125	358
Liquid asset—net income ratio[1]									
Nil	4	55	27	11	3	*	850	+ 7	39
Less than 10%	12	54	7	23	4	*	540	+ 17	117
10—29%	17	36	6	29	12	*	330	+ 23	159
30—99%	16	36	7	24	17	—	350	— 7	232
100—199%	16	33	5	20	26	—	150	— 21	238
200% and over	16	18	9	19	35	3	200	— 36	381
Expenditure on durable goods									
Nil	10	49	16	15	7	3	2,050	†	†
£1—49	17	30	2	39	10	2	210	†	†
£50—99	15	23	*	36	22	4	210	†	†
£100 and over	16	7	*	13	57	7	120	†	†
Unusual expenses[2]									
None	9	49	17	17	5	3	1,600	†	†
Household expenses ...	16	29	5	25	22	3	400	†	†
Illness and births ...	9	35	9	27	16	4	200	†	†
Others	15	27	5	21	28	4	400	†	†

* Less than a half of one per cent. † These figures have not been computed.

[1] The ratio of total liquid assets held at the beginning of the year to net income during the year.

[2] The question was : 'Looking back over the last 12 months, would you say you had any unusual or extra heavy expenses?' The classification of answers is as follows: 'None' means nothing special mentioned, including those who mentioned rising prices and general increase in cost of living. 'Household expenses' includes alterations, repairs and decorations to houses, the cost of furniture and other household goods, whether in order to set up home for the first time or otherwise, and the cost of moving house. 'Illness and births' means mainly expenses such as loss of time at work, cost of home help or the cost of goods bought for a baby, rather than medical expenses. 'Others' includes all other specifically mentioned unusual expenses, such as holidays, weddings, funerals, school fees and the purchase and repair of cars.

TABLE 78

Saving as a Proportion of Net Income Related to other Variables
(percentage distributions of income units)

Type of income unit	*Percentage of net income saved or dissaved*						*Total*
	Saved		*Less than 5% saved or dissaved*	*Dissaved*		*Not ascertained*	
	15% or over	*5–14%*		*5–14%*	*15% & over*		
Change in income 1950-51 to 1951-52							
Increase of :							
15% or more ...	10	27	41	10	10	2	100
5—14%	7	20	51	10	9	3	100
Less than 5% change	8	19	51	9	10	3	100
Decrease of :							
5—14%	7	15	45	14	16	3	100
15% or more ...	10	10	43	12	23	2	100
Liquid asset—net income ratio							
Nil	5	17	70	5	3	*	100
Less than 10 % ...	7	25	54	10	4	*	100
10—29%	15	22	35	17	11	*	100
30—99%	10	22	37	12	19	—	100
100—199%... ...	10	22	27	9	32	—	100
200% and over ...	13	12	19	10	43	3	100
Expenditure on durable goods as per cent of net income							
Nil	8	21	53	7	8	3	100
Under 10% ...	17	21	39	11	8	4	100
10—19%	9	14	28	30	15	4	100
20% and over ...	6	5	9	15	59	6	100

* Less than a half of one per cent.

Change in Income

The effect of a change in income on saving is generally assumed to be positive : that is to say, that people of a given income level who have an increase in income will tend to save more than those of a similar original income level who suffer a decrease. There has been some discussion about this hypothesis and distinctions have been drawn between expected and unexpected changes, temporary and permanent changes, and so on.[1] Figures derived from the American Survey of Consumer Finances show the rather surprising result that, at any rate amongst people with lower than average incomes, a greater proportion of those who had large increases in income drew down their savings than of those whose incomes were unchanged or increased only moderately. The behaviour of the first group was in fact rather similar to the behaviour of people at the other extreme—those who suffered an appreciable fall in income.[2]

This pattern of behaviour, however, seems to be a peculiarity of American conditions. The evidence of our survey—presented in Tables 77 and 78—

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[1] See George Katona, 'Effect of Income Changes on the Rate of Saving,' *Review of Economics and Statistics*, May, 1949.

[2] Katona, *op. cit.*

is such as to suggest that, in general, the greater the increase in income the greater the absolute amount, and proportion of net income, saved. This result could be spurious if there were an appreciable positive correlation between proportionate changes in income and the original income level; but a study of the relevant data reveals no signs of such a correlation and, indeed, it would be very surprising if there were. We must therefore conclude that the peculiarity shown by the American figures is not reflected, so far as we can ascertain, in this country, and that our figures are consistent with the original hypothesis.

On the other hand, it must be noted that the effects of changes in income on saving are by no means as strong as might have been expected, and the only really marked tendency is for those whose incomes fall by a considerable amount (15 per cent or more) to dissave rather heavily. It does not seem, therefore, that change in income is an influence to which very much weight should be attached in attempting to explain saving behaviour.

Receipt of Windfalls

A windfall is defined here as any receipt of money, or money's worth, from a source other than income; but it does not include, in this context, the proceeds of selling assets which have appreciated in value. The windfalls covered by our definition include legacies and capital gifts, lump sums received from insurances, winnings from football pools, and one or two small items. As will be clear from our definition of saving, whenever a person is induced by the receipt of a windfall to spend more than his income he becomes a dissaver. This may seem an unreasonable way of looking at the matter; but there is really no alternative if we are to maintain a consistent set of definitions.

In view of the rigorous way in which people who receive windfalls are treated in this analysis it will not be surprising to find that they are often quite heavy dissavers. The second part of Table 77 shows that the proportion of income units dissaving £50 or more is much larger amongst people who received windfalls of £50 or more than amongst others; and average saving per income unit becomes steadily smaller—increasingly negative—as the size of windfall increases. We may conclude that capital transfers are an encouragement to increased spending. This is particularly clear in the case of transfers arising from death: the State absorbs part of the estate, treating the proceeds as current revenue, while the private heirs are likely to spend at least part of their new found wealth on improving their immediate standard of living.

The Liquid Asset—Income Ratio

The third factor to be considered from the resources side is the stock of wealth already available to the income unit. We have no figures of total net worth, but it seems reasonable to make use of the information available on the stock of liquid assets. It may be, indeed, that liquid assets exert a more immediate influence on saving behaviour than other assets, precisely because they can so easily be used for consumption.

Income units were classified, for this analysis, according to the ratio between their total liquid assets at the beginning of the year and their net income during the year, expressed as a percentage of the latter. The figures in the two tables suggest that there is some association between this ratio and saving behaviour. As the ratio increases there is a tendency, at first, for average saving to increase. It appears that people with some liquid assets are more active both as savers and dissavers than those with no liquid assets, many of whom are rather young or rather old. On the side of dissaving it is clear that people with no liquid assets are limited, and indeed unable to dissave, except to the extent that they can sell other assets or go into debt. As the proportion of liquid assets to net income increases, however, this restricting influence is relaxed; and especially when liquid assets begin to exceed about 20 per cent of net income there is a steady growth in the proportion of heavy dissavers, whether they be defined in absolute terms (Table 77) or in relation to net income (Table 78). It seems, therefore, that the effect of a large ratio of liquid asset holdings to net income is to free people from the close restraints of a limited income and thus to enable them to overspend their incomes more easily.

Expenditure on Durable Goods

We have already found some evidence of a negative association between saving and expenditure on durable goods; and the data presented in Tables 77 and 78 serve to confirm this. In the first set of figures, where saving is measured in absolute terms, there is a clear tendency for the proportion of heavy dissavers to increase as expenditure on durable goods increases. The proportion of heavy savers, however, does not tend to diminish; and it is evident that there are two factors at work. On the one hand, people who spend heavily on durable goods tend to dissave; on the other, people with high incomes tend to spend heavily on durable goods *and* to save heavily. It is necessary, therefore, to eliminate the effect of income; and this is done in the relevant section of Table 78, where both saving and durable expenditure are expressed as a proportion of net income. After this adjustment, the relation between saving and durable expenditure becomes very consistent : the proportion of savers at each level falls as durable expenditure rises, in each case except one, while at the same time the proportion of dissavers rises, with increasing emphasis on the heavy dissavers.

The relation between saving and durable expenditure can be further analysed, for each income group separately, by means of the data given in Table 79. These show the standard deviations of saving, saving *plus* durable expenditure, and durable expenditure for each gross income group, and for the population as a whole. From these standard deviations it is possible to calculate, by simple formulae, the correlation and regression coefficients of saving in relation to durable expenditure.

It will be noted that the standard deviations of all three variables tend to increase as income rises. This tendency, moreover, is associated with an

TABLE 79

Correlations between Saving and Durable Expenditure within Income Groups[1]

Gross income of income unit	*Standard Deviations (in £s) of:*			*Correlation coefficient of saving and durable expenditure*	*Regression coefficient of saving on durable expenditure*
	Saving σ_1	*Saving plus durable expenditure* σ_2	*Durable expenditure* σ_3	r_{13}	b_{13}
Under £200 ...	85	80	14	—0.43	—2.61
£200—399... ...	57	52	30	—0.42	—0.80
£400—599... ...	79	64	57	—0.60	—0.83
£600—799... ...	188	180	67	—0.30	—0.83
£800—999... ...	162	165	79	—0.21	—0.42
£1,000—1,499 ...	331	306	159	—0.39	—0.81
£1,500 and over ...	1,027	972	220	—0.35	—1.63
All income units	172	167	58	—0.25	—0.75

[1] The table refers to all income units in the sample except those whose total saving was not ascertained.

Note. The two coefficients, r_{13} and b_{13}, are computed according to the following formulae:

$$r_{13} = \frac{\sigma_2^2 - \sigma_1^2 - \sigma_3^2}{2\sigma_1\sigma_3} \text{ and } b_{13} = r_{13}\frac{\sigma_1}{\sigma_3}$$

increase in average saving and in durable expenditure. Thus, *between* income groups saving and durable expenditure are positively correlated, while *within* income groups, as the table shows, the two variables are negatively correlated. This explains the fact that the correlation between saving and durable expenditure in the whole population, with a coefficient of —0.25, is less close than the correlation in all except one of the individual income groups. The coefficients of the individual groups range from —0.21 to —0.60 and, although they are significant of some (negative) association, they are not exceptionally high. It must be remembered, however, that the income groups are fairly broad—not less than £200 each—and there is still likely to be some positive correlation within them between saving and durable expenditure, arising from variation of income within the groups. In the column of regression coefficients, little attention need be paid to the exceptionally large coefficient for the lowest income group, which is probably due to special causes; but amongst the remainder we find, by an interesting coincidence, that two have the same value, —0.83, and two others are very similar. Judging by this evidence, it seems fair to conclude that, at any given level of income, an increase in expenditure on durable goods causes, on the average, a diminution of saving by at least four-fifths of the value of the extra durable goods purchased.[1]

Unusual Expenses

Finally, we consider the hypothesis that 'unusual' expenses affect saving. Everything clearly depends here on what is meant by ' unusual '. The question, whose text is given in the note to Table 77, leaves this problem to be settled by the respondent according to his own interpretation of ' unusual or extra heavy expenses '. Some people did in fact mention certain expenses, such as those caused by rising prices, which we decided not to treat as ' unusual ', because they are not, in general, specific to individuals but affect everyone. The other expenses mentioned fall roughly into three groups: firstly, household and housing expenses, such as furnishing or moving house or doing repairs; secondly, illnesses and births, which sometimes disrupt the family life, and entail expenditure on home helps and on the purchase of various items ranging from new teeth to baby napkins; thirdly, all other specific expenses, including weddings, funerals and holidays.

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[1] A multivariate analysis of the relation between saving, income and durable expenditure suggests that saving is reduced by the full amount of additional expenditure on durable goods.

From the analysis shown in Table 77 it is clear that the proportion of dissavers is much larger amongst those income units who mentioned specific unusual or extra heavy expenses than amongst others. Household expenses and the miscellaneous group seem to have a particularly important effect on saving, while illnesses and births are of lesser importance. There is an overlap between this question and that which deals with durable expenditures and it would be useful to be able to make a closer analysis of the effect of the non-durable expenditures separately; but the data, as compiled, do not admit of any further probing. As a further qualification, it must be admitted that the question was phrased in a biased manner: ' unusual and extra heavy ' expenditures were asked for, but not ' extra light ' expenditures. It may well be that people whose expenses are suddenly reduced become heavy savers. The only conclusion that can be drawn, therefore, is that there are almost certainly some types of unusual expenditure, in addition to the purchase of durable goods, which cause a sharp drop in saving during the period in which they occur.

Conclusion

Personal saving is a variable and elusive quantity which, though moving in a fairly stable path for large groups, exhibits sharp fluctuations from one individual to another. Some of these fluctuations can be explained by peculiarities of individual experience, such as, exceptionally large changes in income, the receipt of a windfall, or unusual expenditures on durable goods or for other purposes. Others may be explained by a combination of circumstances, as in the case of newly-married couples who receive windfalls (wedding presents) and spend those, as well as their own accumulated savings, on buying durable goods and in meeting other unusual expenses. Particular experiences may affect different types of people in different ways: for example, it seems that windfalls received by managers usually cause additional spending, while it is possible that some other groups—the self-employed or the retired—do not react in quite the same way. Similarly, amongst people with large stocks of liquid assets we may distinguish some whose incomes are very low, or have recently fallen, and others whose incomes are high. These two groups show different saving propensities, the low income people using their stock of liquid assets as a reserve out of which to finance current expenditure and the high income people on the whole adding to their stock.

In addition, as was shown in the first part of this paper, there are some groups whose average level of saving is higher in relation to their incomes than others: in particular, the self-employed plough back a large proportion of their incomes into their businesses, and mortgagors are committed to heavy contractual saving in repayment of their mortgage debt.

A complete explanation of saving behaviour must try to take account of as many of these different influences as can be shown to be independently important. But the fundamental determinant of saving is clearly the level of income.

H. F. LYDALL.

The INSTABILITY *of* STERLING COMMODITY PRICES

The very violent movements in the prices of primary products since 1949 have quite properly received a great deal of attention, but little quantitative investigation has been carried out into the relative movements of commodity prices. The dimensions of the oscillation of commodity prices in general have tended, in particular, to distract attention from the very different progress of the prices of commodities which are produced and exported predominantly by the sterling area and those which are predominantly dollar exports. The importance of this division will be immediately apparent; on it rests to a very great degree the notion of the sterling area's terms of trade *vis-a-vis* the dollar area. This article is an attempt to investigate the relative price movements of sterling and dollar commodities, and to discuss the most striking outcome of such an investigation—the vastly greater instability of sterling commodity prices, as compared with the prices of dollar commodities, in the years following the war.

The first stage of such an enquiry is obviously the construction of index numbers which measure with reasonable accuracy the price movements of the two heterogeneous groups of commodities discussed here under the titles of sterling and dollar commodities. Price series for fourteen major commodities were therefore employed to construct two index numbers. Seven were used to form an index of sterling commodity prices and the remainder a dollar commodity price index; a general index of commodity prices as a whole was constructed, of course, by combining these two index numbers. The commodities included are listed in Table I ; the allocation of each commodity to the sterling or dollar area was based on the sources of the greater part of world production. This allocation was simple enough in the majority of cases, but a small number of commodities were excluded from the indices, however, on the ground that they could not be unambiguously credited to either area—for example, oil and sugar, of which both the sterling and dollar areas are major producers.

Since the fourteen commodities are quite obviously far from equal in importance, their prices were weighted in accordance with the value of world trade in each commodity during 1949; the system of weights is shown in Table I. An arithmetic mean was used in the interests of simplicity. Obtaining representative prices for these commodities is a difficult matter, and it was thought best to employ the price series given in the various publications of international organisations quoted at the foot of Table I; in every case, however, a sterling price was used for commodities included in the sterling index and a dollar price for those included in the dollar index. The prices chosen were in general the f.o.b. prices in the principal export markets, or, where the trade in particular commodities is principally transacted through one of the main commodity exchanges, the price in such markets.[1]

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[1] For example : zinc, Prime Western f.o.b. New York ; wheat, No. 2, Hard Winter, Kansas City ; lead, pig desilverised f.o.b. New York ; rubber, No. 1, R.S.S. London ; jute, middle Narayanganj, Pakistan ; coffee, Santos No. 4 in Santos, Brazil.

TABLE I

World Production and Trade in Primary Products, 1948–1949

Commodities (*1*)	World Production[1] Sterling Area % (*2*)	Dollar Area % (*3*)	World Trade 1949 $ million[2] (*4*)	Weights For general index (*5*)	For separate indices (*6*)
Sterling Commodities					
Tea	62	—	674	5	13
Rubber	59	—	642	7	17
Jute	99	—	160	2	4
Wool	49	9	1,231	13	33
Hides[3]	40	10	226[4]	2	6
Tin	48	24	437	4	12
Cocoa	54	14	556	6	15
Dollar Commodities					
Tobacco	14	32	427	4	7
Wheat	10	25	2,526	25	41
Cotton	11	54	1,483	15	24
Zinc	3	65	95[5]	1	2
Lead	16	52	110[5]	1	2
Copper	12	48	679	7	11
Coffee[6]	6	88	792	8	13

Sources: Annual *Review of International Commodity Problems*, United Nations. *Statistical Yearbook*, United Nations. *Yearbook of International Trade Statistics*, United Nations. *Direction of International Trade*, United Nations. *Commodity Trade Statistics*, United Nations. *Yearbook of Food and Agricultural Statistics*, F.A.O., United Nations. *Statistical Abstract of the United States*, U.S. Department of Commerce. *Minerals Yearbook*, U.S. Department of the Interior. *Yearbook of Agricultural Statistics*, U.S. Department of Agriculture. *The Sterling Area, an American Analysis*, E.C.A., 1951.

[1] Allocation of production to the sterling and dollar areas has been based on United Kingdom exchange control regulations. The sterling area includes all countries in the Transferable Accounts group, while the dollar area comprises countries with American and Bilateral Accounts. While this cannot be said to be a perfect arrangement, from the point of view of the sterling area balance of payments, it is probably as good as any other.

[2] Estimates compiled from volume figures multiplied by the appropriate 1949 world prices.

[3] Production figures based on U.S. imports from sterling and dollar areas.

[4] Trade in 1951 adjusted for price changes.

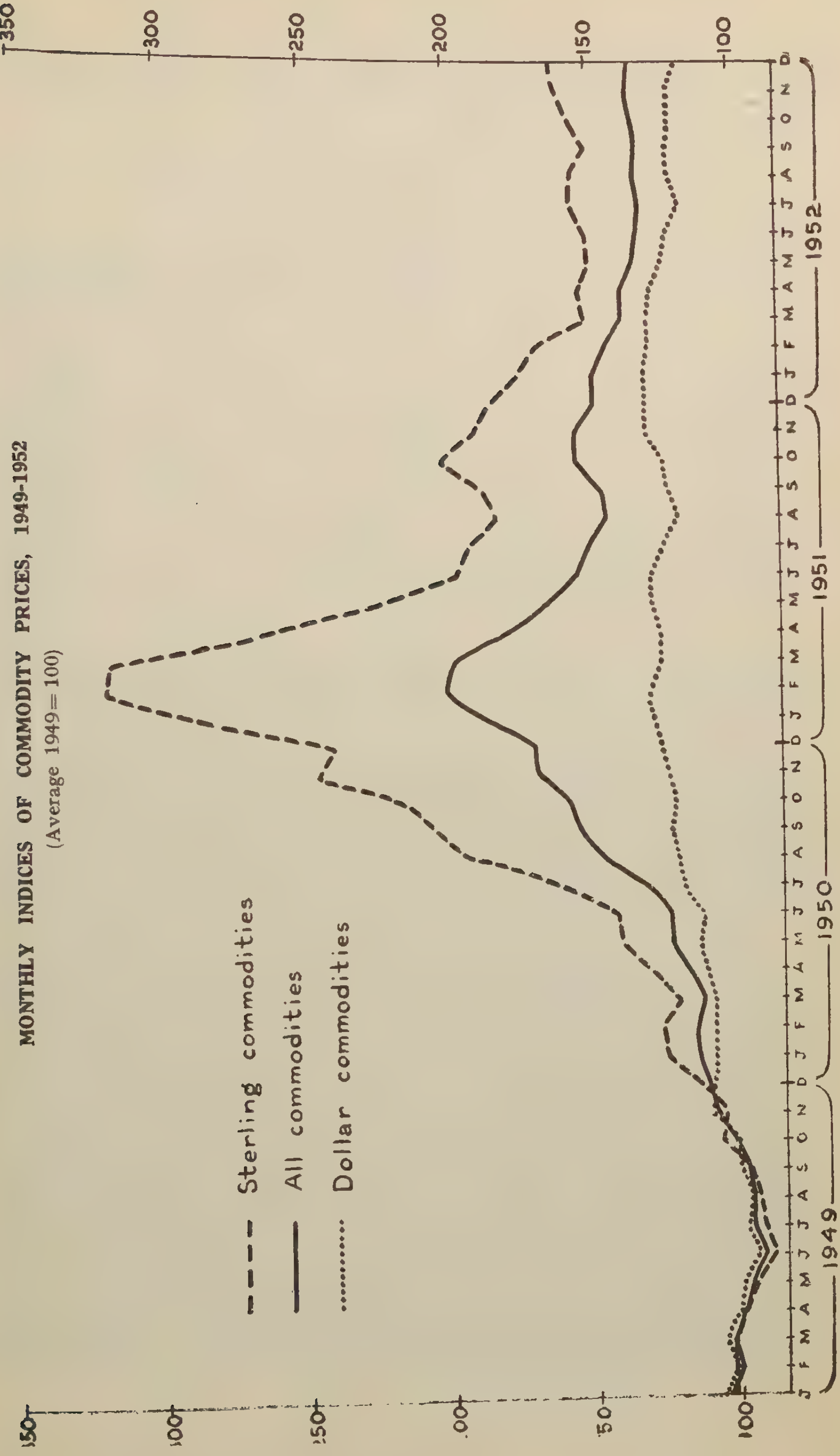
[5] Based on major world traders only.

[6] Production figures include Brazil in the dollar area.

The general movements in the three indices are shown in Table II; monthly figures for the years 1949 to 1952 are shown in the chart opposite and in the appendix. The year 1949 has been taken as the base on the ground that the special abnormalities associated with post-war reconstruction continued until 1948, the year in which European production in general regained pre-war levels. The general index, which was calculated by giving the fourteen price series the weights shown in col. 5 of Table I, records the familiar oscillations in world commodity markets especially during 1950 and 1951; its movements are, naturally enough, similar to those of the various commodity indices already published. The problem to which this article is addressed is posed by the movements in the constituent indices; the contrast between the sterling and dollar indices is so great as to require little comment. Between June of 1949 and February of 1951 the index of the prices of sterling commodities rose 231 points, while the dollar commodity index rose no more

MONTHLY INDICES OF COMMODITY PRICES, 1949-1952

(Average 1949 = 100)



than 36; between February and August of 1951 the sterling index fell 136 points while the dollar index fell only 10 points. The instability of commodity prices in recent years, in other words, has been almost wholly an instability of the prices of sterling commodities.

TABLE II

Indices of Primary Product Prices, 1938–1952

(1949 = 100)

Year		*All Commodities*	*Sterling Commodities*	*Dollar Commodities*
1938	... ...	34	33	35
1947	... ...	96	87	102
1948	... ...	104	100	106
1949	June	91	88	93
	December	110	113	108
1950	June	123	142	111
	December	170	241	126
1951	June	154	196	128
	December	148	186	130
1952	June	133	151	122
	December	135	162	118

Note. See Appendix, Table A, for full series and sources.

II.

It is natural to begin by investigating the relative movements of these commodities in pre-war years. Is this tremendous divergence essentially a post-war characteristic, or is it an old feature of commoditity prices ? A fairly definite answer to this question is possible with the aid of a recent United Nations publication[1] which throws a good deal of light on the matter. The figures given in Table III show the relative instability of the prices of the various commodities during both the whole of the past half-century and the period 1946–50, measuring instability by the percentage fluctuation between the average prices of consecutive years. The story which these figures tell is very clear, and confirms the findings of the indices now presented here. Over the past fifty years as a whole, the variability of sterling commodity prices has been virtually identical with that of dollar commodity prices—the unweighted averages are 14.0 per cent compared with 14.8 per cent, while employing the system of weights used in Table 1, the weighted averages are 14.5 per cent compared with 14.2 per cent. The experience of the post-war years has been quite different; here the variability is very substantially divergent—22.3 per cent compared with 15.9 per cent without weighting the individual commodities, and 22.3 per cent compared with 10.0 per cent when weighting is carried out. It is obvious that, by and large, the fluctuations in commodity prices during the first 45 years of this century have been shared more or less equally by sterling and dollar commodities; in the post-war years this ceased to be true. It is clear enough that the instability of sterling commodities relative to dollar commodities is a post-war phenomenon, calling for explanation in terms of post-war factors.

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[1] *Instability in export markets of under-developed countries*, United Nations Department of Economic Affairs, New York, September 1952.

TABLE III

Year-to-Year Fluctuations in Primary Product Prices, 1901–1950[1]

	Unweighted		*Weighted*[2]	
(*1*)	*1901–1950* % (*2*)	*1946–50* % (*3*)	*1901–1950* % (*4*)	*1946–50* % (*5*)
Sterling Commodities				
Tea	7.1	14.3	92	186
Rubber	20.6	11.5	350	196
Jute	15.0	25.3	60	101
Wool	14.2	21.7	469	716
Hides	11.3	18.9	68	113
Tin	13.3	15.4	160	185
Cocoa	16.7	48.9	251	734
Average	*14.0*	*22.3*	*14.5*	*22.3*
Dollar Commodities				
Tobacco	18.4	1.0	129	7
Wheat	11.9	9.8	488	40
Cotton	15.4	18.0	370	432
Zinc	13.6	22.1	27	44
Lead	13.4	25.3	27	51
Copper	13.8	17.5	152	193
Coffee	17.2	17.6	224	229
Average	*14.8*	*15.9*	*14.2*	*10.0*

Source: *Instability of export markets in under-developed countries*, United Nations Department of Economic Affairs, September 1952.

[1] Average fluctuation per year.

[2] Weights as used in Table 1, col 6.

What, then, are the factors underlying the meteoric movements in sterling commodities? Why did these factors leave dollar commodities relatively unmoved? A possible explanation is that the production of dollar commodities was more responsive to price changes than that of sterling commodities, the resultant rise in output checking the rise in prices.[1] Table IV has been constructed in order to test this hypothesis.

It is, of course, a very rough and ready test, but the evidence provided by the production figures does not support the argument. Taken as a whole, the production of dollar commodities rose proportionately *less* than that of sterling commodities in 1950, the year following a great upward movement in prices—the production of sterling commodities rose 9 per cent while that of dollar commodities rose only 3 per cent. This does not necessarily mean, of course, that the productive system of the dollar world is *less* responsive than that of the sterling area, since the price stimulus being applied to the former was considerably smaller than that applied to the latter. But it does mean that the evidence will not support any hypothesis which explains the

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[1] This is at best only a very crude approximation to the technical concept of elasticity of supply, since it is well-known that in the real world price changes are by no means the only stimulus which can cause the reflex of output adjustment—other obvious factors in the present context are government policies with regard to acreage, and the vicissitudes of the weather.

Table IV

Indices of World Production of Primary Products 1948–51
(1949 = 100)

(*1*)	*1948* (*2*)	*1949* (*3*)	*1950* (*4*)	*1951* (*5*)
Sterling Commodities				
Tea	93	100	107	120
Rubber	102	100	119	125
Jute	116	100	120	170
Wool	98	100	101	101
Hides	N.A.	N.A.	N.A.	N.A.
Tin	94	100	104	102
Cocoa	100	100	103	90
Average	*101*	*100*	*108*	*118*
Dollar Commodities				
Tobacco	104	100	101	105
Wheat	103	100	102	105
Cotton	92	100	85	107
Zinc	97	100	110	119
Lead	93	100	107	107
Copper	105	100	113	120
Coffee	98	100	100	119
Average	*99*	*100*	*103*	*112*

Sources: *Yearbook of Food and Agricultural Statistics*, F.A.O. *Statistical Yearbook*, United Nations. *Review of International Commodity Problems*, United Nations.

relative instability of sterling commodity prices simply in terms of the greater elasticity of supply of the producers in the dollar area. There are, of course, one or two exceptions to this; the output of wool, for example, rose less in 1950 than did the output of all dollar commodities taken as a whole while the output of copper rose in 1950 to a greater extent than that of sterling commodities taken as a whole. But for overall world production, and in general for representative producers in both sterling and dollar areas,[1] the output of all the commodities involved in the present discussion—with the single exception of cotton[2]—rose in 1950, but that of sterling commodities rose more than that of dollar commodities. In other words, assuming that there had been an equal upward shift in the demand for both, output changes taken by themselves would have tended in 1950 to make the change in prices of dollar commodities *greater* than that of sterling commodities.

III

Having failed to obtain an explanation from the supply factors it is natural to examine changes in demand in the search for the answer to the problem. The commodities involved are internationally-traded commodities, and imports represent a major element in the overall demand for them. Care is necesssary in dealing with fluctuations in demand, however, since every change in consumption is capable of two analytically different interpretations —a movement along and a complete shift of the demand curve—and it is not usually possible from time series data to distinguish between the two. The former concept implies some measurement of demand elasticity, and in this connection, when dealing with primary products, one has to watch out for the perverse demand curve—*i.e.* for a type of demand featured by a rise in consumption caused by a rise in price, as contrasted with the normal demand curve where a rise in price reduces consumption. Certain primary products, especially foodstuffs, may well possess this type of demand; a rise in their prices causes such a significant reduction in the real income of their consumers that the latter are forced to reduce their consumption of relative luxuries, filling the gap left by this reduction by consuming more of the coarser but more necessary primary produce. Taking the primary products as a whole, therefore, it would not necessarily be astonishing if a rise in prices were followed by an increase in consumption, and one could regard demand as more responsive, and more conducive to equilibrium in the markets, if consumption merely rose less for one group of commodities than for another; there might be no absolute decrease in the consumption of either. On the other hand, faced with a time series in which price and consumption are positively correlated, the alternative explanation of an upward (downward) shift in the whole demand curve *causing* a rise (fall) in price must also be considered; and it is probable that exogenous factors will have to be called into play in each case in order to determine its particular explanation. The path of investigation is therefore a peculiarly treacherous one, and the bare statistics have to be interpreted with a great deal of judgement. Again concentrating on 1950 when the rise in commodity prices had been very marked, and some reactions on international demand might be expected, some relevant statistics have been assembled in Table V which show the change in the imports into the United Kingdom and the United States during 1950. The data lend a certain amount of support *a priori* to the view that the explanation of the greater instability of sterling prices is to be found partly in demand movements. The United States, on average, increased its demand for sterling commodities in 1950 by 28 per cent, compared with a rise of 29 per cent in its demand for dollar area commodities. The United Kingdom's demand, on the other hand, was very much more stable, since its demand for sterling area commodities was unchanged as between 1949 and 1950 and its demand for dollar commodities actually fell 7 per cent.

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[1] See details in appendix, Table B.

[2] The ouput of which fell by some 15 per cent largely as a result of the acreage policy of the United States government.

This *a priori* conclusion, however, omits a consideration of factors which in fact emphasise the point at issue. The average imports discussed in the preceding paragraph, *i.e.* those shown in columns 2 and 3 of Table V, are arrived at without making any allowance for the varying importance of the several commodities in the bundle of imports purchased by the United Kingdom and the United States. But in fact there are very great variations in the importance of the two economies in trade in the individual commodities, and allowance has to be made for this fact before any accurate picture is obtained of the fluctuations in demand for the different commodities. This is not easily done, but an attempt is made in Table V to construct a weighted index of the volume of imports in 1950. From statistics of the imports of the separate commodities in 1949 by the United Kingdom and the United States the share enjoyed by each in total world trade in the several commodities may be calculated.[1] In columns 5 and 6 of Table V these shares are expressed as ratios, and these relative shares in world imports can be used as weights in attempting to assess the importance to each country of changes in the volume of imports in 1950. Since the relative shares of the two countries in the import of tea, for example, were in the ratio of 88 to 12, the change in imports in each country in 1950 can be given a weight of 88 and 12 respectively, making a rough correction for the different importance of the two countries as buyers of tea. In the case of cocoa, on the other hand, the American share in total imports of which was very much greater in 1949 than the British share, the change in imports can be given a weight of 18 for the United Kingdom and one of 82 for the United States, reflecting the ratio of the shares of the two countries in total trade in cocoa.

With the aid of this system of weights it is possible to re-calculate the changes in imports previously referred to with an allowance for the shares of the two countries in the total world trade in each commodity. This is done in columns 7–9 of Table V, the final outcome being a weighted index of imports of each commodity in 1950 as compared with 1949. This results in a more striking—but also more accurate—impression of what exactly happened to imports of the two main groups of primary products in 1950. Allowing for the varying degrees of importance of the various commodities to the two countries, it is seen that while imports of sterling commodities rose, on balance, by 9 per cent in 1950, imports of dollar commodities on balance actually fell by 2 per cent. Even this understates the shift in demand, since no allowance is made in the weighting—which is based on 1949 imports—for the change in relative shares of world imports which were actually brought about by the changes in imports in 1950. This is particularly the case with wool, the changes in imports of which are weighted according to the relative shares in total imports of the United Kingdom and the United States in 1949. In that year, the ratio between the imports of the two countries was, in round figures, about three to one. 1949, however, was a year of abnormally low United States imports of wool. Imports in both 1948 and 1950 were about 70 per cent higher, transforming the ratio between the imports of the two countries to one of approximately seven to five. In other words, the use of either 1948 or 1950 weights rather than 1949 weights would enormously increase the stress given to the very large increase in American wool imports, and would therefore raise the weighted average of imports of sterling commodities significantly above the figure of 109 shown inTable V.

The upshot of this rather involved discussion of import figures is, therefore, that while the demand for dollar commodities remained relatively stable, and was, if anything, negatively correlated with price, the demand for sterling commodities in 1950 was clearly unstable and was positively correlated with price. Whether this result was more due to a positive elasticity of demand for

[1] These calculations are shown in the appendix, Table D.

TABLE V

U.K. and U.S. Imports, 1949–50

	World Production 1950 (1949=100)	*Imports 1950 (1949 = 100)*		*Ratio of Shares in World Trade*[1]		*Weighted Imports 1950*		*Weighted Average Imports 1950* (7)+(8)
(1)	(2)	*U.K.* (3)	*U.S.* (4)	*U.K.* (5)	*U.S.* (6)	*U.K.* $\left(\frac{3\times5}{100}\right)$ (7)	*U.S.* $\left(\frac{4\times6}{100}\right)$ (8)	(9)
Sterling Commodities								
Tea ...	107	78	114	88	12	68.6	13.7	82
Rubber ...	119	136	122	23	77	31.3	93.9	125
Jute ...	120	118	126	47	43	55.5	54.2	110
Wool ...	101	86	172	74	26	63.6	44.7	108
Hides ...	N.A.	97	115	48	52	46.6	59.8	106
Tin ...	104	99	141	27	73	26.7	102.9	130
Cocoa ...	103	89	105	18	82	16.0	86.1	102
Average ...	109	*100*	*128*					*109*
Dollar Commodities								
Tobacco	101	102	103	78	22	79.6	22.7	102
Wheat ...	102	69	197	95	5	65.6	9.9	76
Cotton ...	85	98	168	83	17	81.3	28.6	110
Zinc ...	110	99	125	56	44	55.4	55.0	110
Lead ...	107	92	131	59	41	54.3	53.7	108
Copper	113	102	95	38	62	38.8	58.9	98
Coffee ...	100	91	83	4	96	3.6	79.7	83
Average ...	*103*	*93*	*129*					*98*

Sources : Based on statistics given in the sources quoted for Table I.

[1] Based on 1949 figures. See the appendix (Table D) for detailed computation of these ratios.

sterling and a negative one for dollar commodities, or to a much greater upward shift in the demand curve for the former, it is not possible at this stage, finally to determine. For reasons to be put forward later, however, there are strong grounds for believing that the primary cause of the relatively greater sterling price instability was the greater upward shift in the demand for these products, although the low, or even positive, elasticity of the shifting curve may well have acted as a secondary and aggravating influence. Without very much doubt, however, these demand fluctuations provide one valuable clue to the greater volatility of sterling commodity prices.

Another important influence at work may be brought out as a result of this discussion of the movement of imports in 1950. For convenience, the production indices shown in Table IV have been repeated in column 2 of Table V, where they may be compared with the movement of imports. If the changes in the import demand for each commodity is set against the change in the output of that commodity, some indication is given of the current ' inflationary gap '—if yet another verbal blow may be struck at that wretchedly over-worked expression.[1] If one considers the commodities imported into the United States, it is seen that in the case of every sterling commodity, the import demand rose by an amount *greater* than the increase in world production of those commodities—many extra dollars were busily chasing not-so-many extra sterling commodities. Of seven dollar commodities, however, the rise in imports exceeded the rise in production in the case of only five; and of these five, three were imported by the United States on only a negligible scale.[1] In the case of only two important dollar commodities, therefore—zinc and lead—was the increase in United States imports in 1950 in excess of the rise in world production. Contrast this with the imports of the United Kingdom. The rise in these in 1950 was greater than the rise in production in the cases of only two of the fourteen commodities—one dollar commodity, cotton, and one sterling commodity, rubber. The pressure on prices exerted by the United States in 1950—primarily, of course, on sterling commodities—was therefore considerably greater than the pressure exerted by the United Kingdom on either sterling or dollar commodities. Taking the weighted average of the total imports of both the United Kingdom and the United States in 1950, it is found that the change in imports exceeded the change in production for each of the three most important sterling commodities—rubber, tin and wool—while both production and imports rose by about the same amount in the case of a fourth sterling commodity, cocoa. For dollar commodities, on the other hand, the combined imports of the two countries rose by an amount greater than the change in production in the case of only one commodity, cotton, the changes being about equal in the case of two others, tobacco and zinc.

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[1] This is no more than a first approximation, since in the United States some part of any increase in demand may be met from home production. In so far as the United States produces proportionately more dollar than sterling commodities, the inflationary gap so defined will be *pro tanto* the greater.

Put briefly, therefore, the evidence bears out the view that in 1950 the demand on the part of the United States for imports proved to be very much greater relative to the supply of those imports than was the case with the commodities imported by the United Kingdom; as a result, the commodities which displayed the greatest instability of price were those for which the United States is the major buyer. The 1950 rush to accumulate strategic reserves of the main commodities included in the present index—especially rubber, tin, wool, cotton, lead, zinc and copper—originated with governments and their buying agents. This, in turn, generated expectations amongst private consumers of imminent scarcity in these commodities, and a further demand pressure arose. The impact of this on sterling commodities was much greater than on dollar commodities for two main reasons. Firstly, as already mentioned, the sterling commodities involved were of relatively greater importance in the whole sterling group than the dollar commodities involved were in the whole dollar commodity group. The second reason is perhaps more fundamental. This is that the demand for dollar commodities exercised by the non-dollar world is at all times subject to the familiar and over-riding consideration of the dollar shortage; in fact, the United Kingdom's demand has been directly limited, for this reason, by quantitative import controls. The demand for sterling commodities has been very much less restrained by this sort of consideration; the vast export surplus of the dollar world, the availability of large sterling balances which have been to some extent an unwanted asset to certain holders, and the general softness of sterling in the post-war monetary structure have together ensured that currency considerations have been relatively minor in connection with the demand for sterling commodities.

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[1] *I.e.*, tobacco, wheat and cotton, imports of which were only 9, 1 and 5 per cent respectively of world trade in 1949.

IV

The explanation of the absence of the relative instability of sterling commodity prices before the war (relative, that is, to the prices of dollar commodities), follows more or less directly from these considerations. That is, the dollar shortage existed, if at all, to only a minor degree, while sterling was regarded as being as good a currency as any other; both facts follow logically, of course, both from the absence of the structural distortions originated or aggravated by the war, and from the tendency amongst pre-war governments of attach greater priority to balance of payments considerations in comparison with the state of internal employment. But there are two further important reasons for the closer pre-war movements in prices of the two groups of commodities. In the first place, the 1920's and the 1930's were an open season for both private and official commodity-stabilisation schemes, and this was true more especially of sterling commodities. During the post-war years, by contrast, virtually the only significant stabilisation schemes amongst the sterling group have been those for the relatively less important commodities, tea and jute; amongst the dollar commodities, however, such a scheme has been conducted on an international level for the vitally important item of wheat, while the United States government has exercised a not inconsiderable influence over the production of cotton and tobacco. Hence, an important factor stabilising sterling commodity prices before the war has been largely absent since the war, while dollar commodity prices have been made less volatile since the war by a factor which was previously of little significance.

The second additional factor in the post-war years is almost certainly of more fundamental significance. This is the vastly increased importance of the United States as an importer of primary products in general, which clearly implies that any given degree of instability in American import demands has had in the post-war world a distinctly greater impact on commodity prices than would have been the case before the war. This change arises mainly from the fact that the productive capacity of the United States has grown at a greater rate than its supply of raw materials, a fact which exercised the minds of the expert committee set up in 1951 to advise President Truman on America's future raw materials policy. The Committee point out that whereas in 1900 the United States produced 15 per cent more raw materials than it consumed, by 1950 its consumption of primary products had outstripped its own production by 10 per cent.[1] Some indication of the extent of this change is given by the statistics presented in Table VI. Of the fourteen commodities included in the price index discussed earlier, details are available permitting a comparison in seven cases of the change in the pre-war and post-war share of the United States in world trade. It will be seen that in only one case—jute, among the least important commodities in the group—has the United States share of total imports declined since before the war. In the case of three, tin, wool and coffee, the increase has been very large indeed. Wool is a particularly interesting case, since it is one of the commodities in which American dependence on imports has increased most. Here the cause of the increased American share in world trade has not been primarily the relatively more rapid growth of production than of raw material supply but rather an absolute decline in home-produced wool, and thus a reversal in the relative shares in American wool supplies represented by domestic production on the one hand and imports on the other. Between 1937 and 1948, for example, total United States consumption of wool rose slightly from 335 to 351 thousand metric tons. But whereas in 1937 domestic production accounted for nearly two-thirds of this total (202 thousand) and imports slightly more than one-third (133 thousand), in 1948 the positions had been reversed, domestic production (134 thousand) providing a little over one-third of the total and imports (217 thousand) nearly two-thirds. By 1950, indeed, the shift had proceeded further, and imports (212 thousand) amounted to more than 1937 production, even though total consumption was virtually unaltered.[2] Any change in the United States demand for commodities, therefore, now possesses a very much greater significance for commodity price levels and the quantities involved in international trade in primary products.

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[1] See *Resources for freedom. Volume I, Foundations for growth and security.* A report to the President by the President's Materials Policy Commission, Washington, June 1952.

TABLE VI

U.S. Share in World Imports, 1938 and 1948

Commodity	*1938* %	*1948* %
Tea	9	11
Rubber	38	51
Jute	9	5
Wool	5	31
Cocoa	37	43
Tin	40	60
Coffee	49	54

Sources: *The Network of World Trade*, League of Nations. *International Financial Statistics*, I.M.F. *Yearbook of Food and Agricultural Statistics*, F.A.O.

In these considerations, of course, lies the answer to the problem of whether this greater instability of sterling commodity prices is likely to continue into the future. The answer is positive or negative according as to whether the three main causes—the dollar shortage, the relatively less coverage of post-war stabilisation schemes in sterling commodities and the greater share of the United States in commodity trade—continue or cease to feature in the international economic scene. The answer will be given, therefore, by the prophet rather than the economist. But the economist would probably give three hot tips to the prophet commissioned for the task—firstly, that the dollar shortage *must* sooner or later be solved; secondly, that stabilisation schemes are notoriously longer-lived in depression conditions than in prosperity;[1] and, third, that the continued and, indeed, increased participation of the United States in the consumption of non-dollar products is one essential requirement for the restoration of sense and solvency in the western economic world.

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[2] Based on statistics given in United Nations *Statistical Yearbook* and F.A.O. *Yearbook of Food and Agricultural Statistics.*

Finally, how much does all this matter for the sterling area ? The mere enunciation of that question is an invitation to a treatise of several volumes, but two important points may be indicated. The first is this. Instability is a feature not only of commodity prices but also of the quantities of those commodities entering into world trade. This examination has been concerned only with commodity prices, but in fact the volume of primary products traded internationally has outshone prices in its volatility. This means, of course, that the total revenue derived by producers of primary products has varied to a greater extent than prices, and even to a greater extent than prices or volumes taken separately. Between 1923 and 1939, for example, the imports of the United States from the rest of the world varied from year to year, on average, by 8 per cent in price but by nearly 16 per cent in total value—*i.e.* price multiplied by volume. The same country's imports from the overseas sterling area, however, which consist very largely of primary products varied on average by 18 per cent in price but by no less than 29 per cent in total value.[2] Changes in the volume of trade have therefore accentuated, rather than offset, changes in price.

The second point is that the United Kingdom and the United States do not, in general, obtain their raw materials from the same sources; the United Kingdom demand is concentrated primarily on the sterling area, while the United States demand is focussed mainly on Latin America and what may be called the outer dollar area.[3] To the extent that Britain's demand for commodities is less unstable than the American demand, therefore, the outer sterling area might conceivably suffer some loss of stability of export revenue by selling commodities to the United States rather than to Britain. It does not follow, of course, that the sterling area should therefore cease its efforts to expand its sales to the dollar area, if necessary at the expense of other markets. It could be argued that some concerted attempt should be made to reduce the fluctuations in United States imports or, at least, that provision for greater fluctuations in the export proceeds of sterling area primary producers should be made to meet it. Such provision might take the form of adequate reserves, or of some degree of restraint from, on the one hand, extravagance when the commodity sun is shining and, on the other, from counsels of despair during the less exhilarating phases of the cycle.

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[1] Witness the crumbling of the wheat stabilisation scheme, and the recent decision to shelve the plan for an international buffer-stock scheme in rubber.

[2] Statistics taken from *Instability in export markets of under-developed countries*. United Nations, 1952.

[3] U.S. imports from the sterling area in 1949–50 of wool, rubber and cocoa, for example, were respectively 46 per cent, 53 per cent and 48 per cent of total U.S. imports. The comparable figures for the United Kingdom were 94 per cent, 91 per cent and 77 per cent. (See *The sterling area, an American analysis*, E.C.A., 1951).

But the implications are fairly clear. So long as the factors advanced as the main causes of the relatively greater price fluctuations of sterling commodities continue to operate, the sterling area's external accounts will almost inevitably present the instability which has dominated recent years. This fact is of fundamental importance to the economic policy of the sterling area as a whole. It implies a necessity for considering sympathetically any proposals which hold out some reasonable hope of reducing the violence of commodity price-movements; the sterling area has more to gain from such schemes than the majority of world trading groups. It implies an acceptance by all the members of the sterling area of the necessity to base policy upon longer-term considerations than the annual oscillations of the international commodity markets. It emphasises once again the importance of a level of foreign exchange reserves in the sterling area commensurate not only with the inflated values of current international trade, as compared with pre-war, but also with this increased relative instability of the prices of sterling commodities which this article has sought to analyse.

C. D. Harbury.
Edward Nevin.

University College of Wales,
Aberystwyth.

STATISTICAL APPENDIX

TABLE A

Indices of Commodity Prices, 1938–1952

(*Average 1949 = 100*)

	All commodities	*Sterling commodities*	*Dollar commodities*		*All commodities*	*Sterling commodities*	*Dollar commodities*
1938 ...	34	33	35	1951 J ...	188	286	128
1947 ...	96	87	102	F ...	201	319	129
1948 ...	104	100	106	M ...	198	317	126
1949 ...	100	100	100	A ...	179	266	126
				M ...	165	225	128
				J ...	154	197	128
1949 J ...	103	101	105	J ...	150	193	124
F ...	100	101	100	A ...	144	183	119
M ...	102	101	103	S ...	147	187	122
A ...	99	99	99	O ...	154	203	124
M ...	97	95	98	N ...	154	191	130
J ...	91	88	93	D ...	148	186	130
J ...	95	91	96				
A ...	94	93	95				
S ...	96	96	97				
O ...	101	106	99	1952 J ...	148	175	131
N ...	107	105	108	F ...	144	168	129
D ...	110	113	108	M ...	138	152	129
				A ...	138	154	128
				M ...	134	150	124
1950 J ...	113	124	107	J ...	133	151	122
F ...	114	126	107	J ...	132	155	118
M ...	112	121	107	A ...	134	155	121
A ...	117	130	110	S ...	133	151	122
M ...	123	140	113	O ...	134	156	121
J ...	123	142	111	N ...	136	160	121
J ...	134	160	118	D ...	135	162	118
A ...	147	192	119				
S ...	154	206	123				
O ...	157	217	121				
N ...	169	246	123				
D ...	170	241	126				

Sources: Price series used in the computation of these indices were taken from the monthly issues of: *Food and Agricultural Statistics*, F.A.O. *Agricultural Economic Statistics*, F.A.O. *Monthly Bulletin of Statistics*, United Nations. *International Financial Statistics*, I.M.F.

TABLE B

Indices of Production of Primary Products in Selected Countries, 1948–1951
(1949 = 100)

	Country	Production			
		1948	*1949*	*1950*	*1951*
Sterling Commodities					
Tea	India	98	100	104	106
	Ceylon	98	100	102	106
Rubber	Malaya	104	100	103	90
	Ceylon	107	100	126	119
Jute	India and Pakistan	117	100	120	172
Wool	Australia	90	100	104	102
	New Zealand	93	100	100	100
Hides	Malaya	80	100	105	120
Tin	Australia	100	100	136	N.A.
Cocoa	Gold Coast	102	100	98	106
	Nigeria	106	100	117	111
Dollar Commodities					
Tobacco	United States	100	100	103	188
	Canada	90	100	87	111
Wheat	United States	115	100	89	86
	Canada	104	100	124	151
Cotton	United States	92	100	62	94
	Brazil	113	100	115	115
Zinc	United States	97	100	104	108
	Canada	95	100	99	106
Lead	United States	94	100	105	90
	Canada	110	100	117	112
Copper	United States	108	100	117	113
	Canada	96	100	105	108
Coffee	Mexico	90	100	112	124
	Brazil	97	100	100	101

Sources : As for Table I.

TABLE C

Indices of Quantum of Imports into United Kingdom and United States, 1948–1951 (1949 = 100)

	United Kingdom				United States			
	1948	*1949*	*1950*	*1951*	*1948*	*1949*	*1950*	*1951*
Sterling Commodities								
Tea	88	100	78	98	97	100	114	88
Rubber	120	100	136	192	111	100	122	111
Jute	96	100	118	119	122	100	126	171
Wool	83	100	86	62	176	100	172	132
Hides	88	100	97	76	148	100	115	100
Tin	104	100	99	108	143	100	141	47
Cocoa	74	100	89	73	87	100	105	97
Average...	*93*	*100*	*100*	*104*	*126*	*100*	*128*	*107*
Dollar Commodities								
Wheat	95	100	69	64	—	100	197	350
Cotton	81	100	98	99	120	100	168	84
Tobacco	94	100	102	118	96	100	103	119
Zinc	117	100	99	85	112	100	125	70
Lead	86	100	92	94	75	100	131	50
Copper	115	100	102	115	86	100	95	115
Coffee	118	100	91	96	95	100	83	92
Average...	*101*	*100*	*93*	*96*	*97*	*100*	*129*	*126*

Sources. As for Table I.

TABLE D

United Kingdom and United States Share in World Trade, 1949

	Imports					*Ratio of Shares in World Trade*	
	World	*U.K.*		*U.S.*			
	Quantum 000 metric tons	*Quantum*	%	*Quantum*	%	*U.K.*	*U.S.*
Sterling Commidities							
Tea	364	215	59	48	8	88	12
Rubber	1,470	189	13	671	45	23	77
Jute	415	96	20	63	15	47	43
Wool	1,040	369	35	124	12	74	26
Hides	N.A.	125[1]	N.A.	133[1]	N.A.	48	52
Tin	199	21	11	62	31	27	73
Cocoa	700	66	9	285	41	18	82
Dollar Commodities							
Tobacco	440	136	31	40	9	78	22
Wheat	23,000	4,480	19	246	1	95	5
Cotton	1,980	466	24	99	5	83	17
Zinc	309	145	47	114	37	56	44
Lead	491	145	30	104	21	59	41
Copper	1,400	316	23	516	37	38	62
Coffee	1,610	45	3	1,327	82	4	96

Source. As for Table I.

[1] Value of trade in 1951 in $ million.